User's Guide

Sahara NetSlate® a510

12.1" Tablet PC

tabletkiosk
Taking the PC where it's never gone before.

Preface

This manual will help you get the most out of your new ***Sahara NetSlate® a510 Tablet PC***. If you are a new computer user, or just new to Tablet PCs, read through this manual carefully before first using your Sahara NetSlate. If after reading this manual you still have questions, visit us online at www.tabletkiosk.com for additional resources and information on using your Sahara NetSlate a510 Tablet PC.

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Disclaimer

The specifications and information in this manual are subject to change without prior notice in order to improve reliability, design and/or function. In no way does this represent a commitment on the part of the manufacturer. The manufacturer assumes no responsibility for errors or omissions in this document.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising from the use, or inability to use, the Tablet PC or this documentation, even if advised of the possibility of such damages.

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If you have any questions regarding the Sahara NetSlate, or the information contained within this manual, please contact TabletKiosk at info@tabletkiosk.com.

Important Safety Instructions

For your own safety and the safety of your equipment, please follow these rules for the handling and care of your Sahara NetSlate. Keep this User's Manual for future reference by you and other users.

Never use sprays, liquids or cleaning detergents to clean the Sahara NetSlate. Use a micro fiber cloth to clean the touch screen. Avoid the use of tissue paper since tissue fibers can easily lodge between the touch screen and the top cover of the tablet.

Never pour liquids into any opening or directly on the Sahara NetSlate. This could result in fire or electrical shock.

Check that the voltage range of the power outlet is between 100V and 240V before connecting the Sahara NetSlate. Exceeding the maximum rated voltage may cause damage to the AC adapter or to the Sahara NetSlate. This could result in fire or electrical shock.

When the AC adapter is plugged into an electrical outlet, place the power cord so it will not be stepped on or walked on. Do not place objects over or on the power cord.

Use the Sahara NetSlate in a clean, dry, temperature controlled environment. Do not use the Sahara NetSlate in areas of high humidity, around water (for example: near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool) or outdoors while it is raining.

Never open or disassemble the Sahara NetSlate. For safety reasons, and to prevent permanent damage, the equipment should only be repaired by qualified service personnel.

Contact a qualified service center if any of the following issues should arise:

1. AC adapter, power cord or plug is damaged;

2. Liquid has been spilled into the Sahara NetSlate;

3. The Sahara NetSlate has been exposed to excessive moisture;

4. The Sahara NetSlate exhibits errors and/or does not function according to specifications;

5. The Sahara NetSlate has been dropped or otherwise physically damaged.

Caution

Lithium-Ion batteries can be dangerous. There is a danger of explosion if the batteries are incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to state or local hazardous waste requirements.

Under no circumstances should the user attempt to disassemble the power supply. The power supply has no user-replaceable parts and its insides contain components that are electrically-charged with hazardous voltage levels that can cause serious personal injury. A defective power supply must be returned to your dealer.

Safety Notices for the Power Cord

This equipment has a 2 or 3-wire power cord. Replace the power cord if it becomes damaged. Contact your dealer for an exact replacement.

In the U.S.A. and Canada, the power cord must be a UL-listed detachable power cord (in Canada, CSA-certified).

2-wire cord	SPT-2 18AWG
3-wire cord	SVT or SJT, 18 AWG, 3-conductor

The cord should be provided with a molded-on cord connector body at the other end. The cord length must not exceed 3 meters (9.8 feet).

Outside the U.S.A. and Canada, the plug must be rated for 250 VAC, 2.5 amp minimum, and must display an international agency approval marking. The cord must be suitable for use in the end-user's country. Consult your dealer or the local electrical authorities if you are unsure of the type of power cord to use in your country. Voltage changes occur automatically in the power supply.

Notice of FCC Compliance

a. Federal Communications Commission (FCC) Requirements, Part 15:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and

2. this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance

with the instruction manual may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ❖ Reorient or relocate the receiving antenna.
- ❖ Increase the separation between the equipment and the receiver.
- ❖ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ❖ Consult the dealer or an experienced technician for help.
- ❖ Use only shielded I/O cables to connect I/O devices to this equipment.

You are cautioned that any changes or modifications not expressly approved by TabletKiosk could void your authority to use the equipment.

b. Regulatory information / Disclaimers

This device must be installed and used in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than the ones specified by manufacturer. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. The manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from the failure to comply with these guidelines.

c. For portable devices without a co-location condition (eg. notebook pc)

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device was tested for typical lap-held operations with the device contacted directly to the human body to the back side of the Tablet PC. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

d. SAR Exposure

This device has been tested for compliance with FCC RF Exposure (SAR) limits in typical flat configurations.

In order to comply with SAR limits established in the ANSI C95.1 standards, it is recommended that the integrated antenna is positioned more than 0cm from your body or from nearby persons during extended periods of operation. If the antenna is positioned less than 0 cm (0 inches) from the user, it is recommended that the user limit the exposure time.

Note-TNV Safety Caution:

To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication line cord. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning. Do not use the telephone to report a gas leak in the vicinity of the leak.

Caution: When using IEEE 802.11a wireless LAN, this product is restricted to indoor use, due to its operation in the 5.15–5.25 GHz frequency range. The FCC requires this product to be used indoors for the frequency range of 5.15–5.25 GHz to reduce the potential form harmful interference to co-channel mobile satellite systems. High-power radar is allocated as the primary user of the 5.25–5.35 GHz bands. These radar stations can cause interference with and/or damage to this device.

Canada, Industry Canada (IC)

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.

This device complies with Industry Canada licence-exempt RSS standard(s). *Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.*

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.

Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

European Union CE Marking Declaration

This product has been tested and found to comply with the EMC requirement subject to the EU directive for CE marking.

Power Savings Reminder

Please remember to shut off your computer if you are not going to use it for an extended period of time in order to save on electricity.

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Chapter 01
Getting Started

Congratulations on your purchase of a ***Sahara NetSlate® a510*** Tablet PC. Your dual mode touch screen+active digitizer or touch screen Tablet PC was designed to get you up and running as quickly and easily as possible. Because the Sahara NetSlate ships to various countries around the world, set-up may vary slightly depending on where you are located.

If you have any questions after reading this manual, please visit our website at www.tabletkiosk.com for more information or to submit a support request.

What's in the Box

Your Sahara NetSlate a510 should come securely packaged in its shipping container along with the items listed below. Contact your dealer immediately if you find that anything is missing or damaged. Note, however, that contents may be changed without notice.

1. AC Adapter with Power Cord
2. Microfiber Cleaning Cloth
3. Neoprene Slip Case
4. Simple Stand
5. Quick Start Guide
6. Windows 7 Getting Started Guide (not included if purchased with Linux)
7. Standard Lithium-Ion Battery Pack(s)

8. Stylus Pen (may not be included with certain touch only configurations)

Setting Up Your Sahara NetSlate

Please read the following steps to begin using your new Tablet PC as quickly and easily as possible.

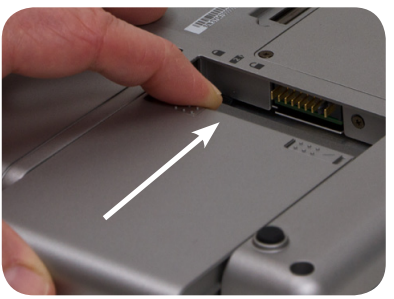
1. Insert the Battery Pack(s)
2. Connect the Sahara NetSlate to an external power source
3. Connect applicable peripherals and networking cables
4. Power on the Sahara NetSlate
5. Complete the Operating System Installation
6. Navigating with the Touch Screen and Digitizer (Pen)

Step 1: Insert the Battery Pack(s)

Turn the system over and place it (optionally), screen down on a solid, clean, flat surface. You can also insert the batteries while holding the Tablet PC if you prefer.

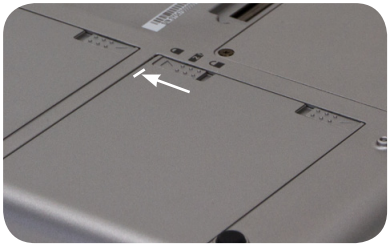
CAUTION: When turning over the Sahara NetSlate, be careful not to place it on a surface that could scratch or damage the screen. You can place the included slip case on the surface before carefully setting the computer down to protect the screen.

Align the first battery into the battery compartment and then slide it into the computer until it clicks securely into place.



Align the battery in the bay and slide it into place. You will hear a click when the battery is properly seated.

Slide the battery-locking tab (the tab closest to the top of the tablet) up to the "locked" ( ) position. Once the locking tab clicks into position, the battery should be securely seated.



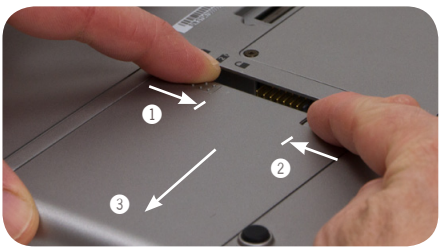
Slide the locking tab on the battery to the locked position to keep the battery secured in the bay.

Repeat for the second battery. While it doesn't matter which battery you insert first, if you are planning on running the system with only a single battery, it should be inserted into battery bay one (1).

To Remove the Battery Packs

Remove the power cord from the "DC Power In" port if plugged in to an external power supply to minimize the chance of electrical shock. Turn over the Tablet PC and (optionally) place it on a solid, clean flat surface. You can also remove the batteries while holding the tablet if you prefer.

Slide the locking tab down to the "unlocked" ( ) position to unlock the battery. Use your other hand to slide the battery release latch in the direction of the arrow engraved on the tab and hold it there. Carefully slide the battery out of its bay.



❶ Slide the locking tab on the battery to the unlocked position and ❷ slide the battery latching tab in the direction of the arrow and hold, ❸ then slide the battery out of the bay.

The batteries on the Sahara NetSlate a510 are hot swappable. This means you can change out discharged batteries for spare, charged batteries without first having to power off the system. Note, however, that the Sahara NetSlate does not have a short-term internal battery. Therefore, you must replace the first discharged battery with a charged battery before removing the second battery if both batteries are completely drained.

IMPORTANT: If you plan on removing the second battery before replacing the first battery you just removed with a charged spare battery, make sure you first shut down the Sahara NetSlate before actually removing the second battery to prevent data loss.

Step 2: Connect the Tablet PC to an External Power Source

Locate the AC adapter and the power cord. Plug the power cord securely into the AC adapter. Plug the AC adapter's connection cable into the "DC Power In" port on the top of the Tablet PC. Once the adapter plug is securely in place, plug the power cord into an external power socket.

NOTE: When you first connect the Tablet PC into an external power source, the battery charge indicator will begin to glow orange. When the battery is fully charged the indicator will turn green. See the section entitled *Battery Usage and Care* for tips on maximizing battery life and performance.

Plug the power cord into the DC Power In port on the top of the Sahara NetSlate.

Plug the power cord into the AC adapter brick and then into a wall outlet.

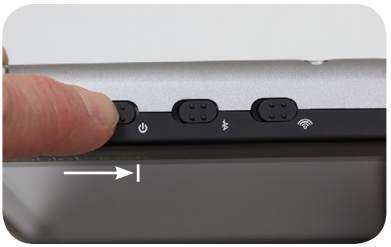
Step 3: Connecting Applicable Peripherals and Networking Cables

If you would like to use any external peripherals with the system (i.e. USB mouse, USB keyboard, etc.) or are planning to connect

to the Internet and/or a corporate LAN using a wired connection as opposed to wirelessly, connect the external peripheral or cable now. See the chapter entitled ***Touring Your Sahara NetSlate***, to identify which ports to use.

Step 4: Powering on the Sahara NetSlate

Locate the three power switches on the top of the Tablet PC. The ⏻ switch is the computer's main power toggle. Slide it to the right and hold it there for three (3) seconds and release. The switch will then emit a blue glow and the Sahara NetSlate will boot up.



Press and hold the power switch on the top of the Tablet PC for three seconds or until the switch glows blue. The system should then boot up.

Once the system is powered on, the power switch will glow blue and the battery indicators will light up (green if the battery is fully charged, orange if it is charging).

Step 5: Completing the Operating System Installation

When your system powers on for the first time, Windows will have a few questions for you to answer in order to localize your installation. If you are planning on using the Fingerprint Reader to assist you in securing your system and logging in, you should create a password when you make your initial user account.

Refer to your operating system's manual for information on any of the questions you are unsure how to answer.

Step 6: Navigating with the Touch Screen and Digitizer (pen)

Unlike a regular laptop or desktop PC, standard navigational activities on a Tablet PC are typically completed using your

fingers or a stylus pen. Navigating with a touch screen is different from navigating with a mouse, while using a stylus pen in Active Digitizer mode on the Sahara NetSlate a510 is actually quite similar to navigating with a mouse.

Touch Screen

The Sahara NetSlate a510 features two different touch panel options to choose from. The first is a traditional, passive resistive touch panel and the second is a projective, capacitive touch screen that supports five finger multi-touch. This means that the capacitive screen will register up to five simultaneous touches at the same time, thus enabling the use of finger gestures such as two-finger tapping, pinching, rotating and two-finger flicking to initiate navigational and operational short-cuts.

The resistive panel recognizes only a single touch at a time, but still supports certain gesture motions such as swiping and flicking to aid in navigational operations. While not as sensitive as the capacitive panel, it has the benefit of being more durable and can be activated by pressure from any type of touch such as a stylus pen, bare finger tip or heavily gloved hand. The capacitive panel will only react to the touch of bare skin or, for medical professionals, an elastic gloved hand.

With either type of touch screen, simply tap on the element you wish to interact with in order to select it, or if the element is a button, to activate it. Sliding your finger while touching the screen will move the on-screen pointer around as if you were using a mouse and holding down the left mouse button. In other words, you would be performing what is known as a drag operation.

Also, as the screen is sensitive to touch, resting your palm on it while tapping with your finger may make the pointer react unpredictably.

Tapping on the screen will perform a standard left mouse button click. Tapping twice in succession is the same as double-clicking your mouse button. Pressing and holding your finger tip on

the screen for about a second or so will perform a right mouse button click. An animated circle will draw around the tip of your finger. Lift your finger from the screen to complete the click.

TIP: When trying to select or activate something on the screen with the stylus pen, pay attention to the position of the pointer icon instead of the end of your finger.

Many newer Windows applications are touch aware. This allows you to navigate documents using what are collectively known as touch gestures and flicks. For example, swiping your finger upward while reading a web page, or a Word document, will cause the screen to scroll downward (actually the screen moves up, you scroll "down" through your document).

Additionally, swiping your finger right on the screen will page you forward through your web browser history or Word document, while pinching two fingers together will zoom out of (or magnify down) your page. You can learn more about touch gestures and flicks in the chapter ***Using Your Sahara NetSlate with Windows 7***.

Active Digitizer (pen)

Using the Sahara NetSlate in Active Digitizer mode is similar to navigating with a mouse. If your Sahara NetSlate a510 came with a dual mode screen, it will also have come with a special stylus pen that you will use to interact with the digitizer panel. Only this stylus will activate the digitizer panel.

Hold the stylus pen as if you were writing with a standard pen. Place the tip of the stylus just above the screen and move it around without letting it actually touch the screen. The screen should automatically switch to Active Digitizer mode when it senses the stylus, and the pointer should follow the tip of the pen around the screen.

Moving the stylus away from the screen will cause it to auto-switch back to touch mode. When in Digitizer mode your hand may rest on the screen, since this will not affect the behavior of the pointer.

TIP: When trying to select or activate something on the screen with the stylus pen, pay attention to the position of the pointer icon instead of the tip of the pen.

Tapping lightly on the screen with the tip of the stylus will perform a standard left mouse button click. Tapping twice in succession will perform a double-click. If you want to perform a right mouse button click, press and hold down the tip of the stylus lightly on the screen. In a moment, an animated circle will draw around the pointer similar to when in touch screen mode. Lift the stylus from the screen to complete the button press.

Dragging the stylus around while touching the screen is equivalent to holding down the left mouse button and dragging.

Similar to when in touch screen mode, Windows 7 supports pen gestures as a way to invoke short-cuts to aid you while working. You can learn more about pen gestures in the chapter ***Using Your Sahara NetSlate with Windows 7***.

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Chapter 02

Touring the Sahara NetSlate

The Sahara NetSlate a510 includes a number of physical characteristics designed to enhance user productivity. Take a moment to familiarize yourself with the controls and Input/ Output (I/O) ports on the faces and sides of the computer. Understanding the layout of the system will help you use your Sahara NetSlate more effectively while in the field or on the go.

Sahara NetSlate a510 Tablet PCs feature an Intel® Atom D525 processor and can be configured with up to 4.0GB RAM for improved responsiveness in Windows 7 over the previous generation of Sahara NetSlate.

Front View

1. **Data Drive Activity and Battery Status LEDs**
   Blinks when internal HDD / SSD reads or writes data
   Charging status of battery 1: ***green*** = 100% charged, ***orange*** = charging, ***blinking*** = battery low (<10%)
   Charging status of battery 2: ***green*** = 100% charged, ***orange*** = charging, ***blinking*** = battery low (<10%)

2. **LCD with Digitizer/Touch Screen**
   Screen may be resistive touch, capacitive touch or a dual mode active digitizer + capacitive/resistive touch.

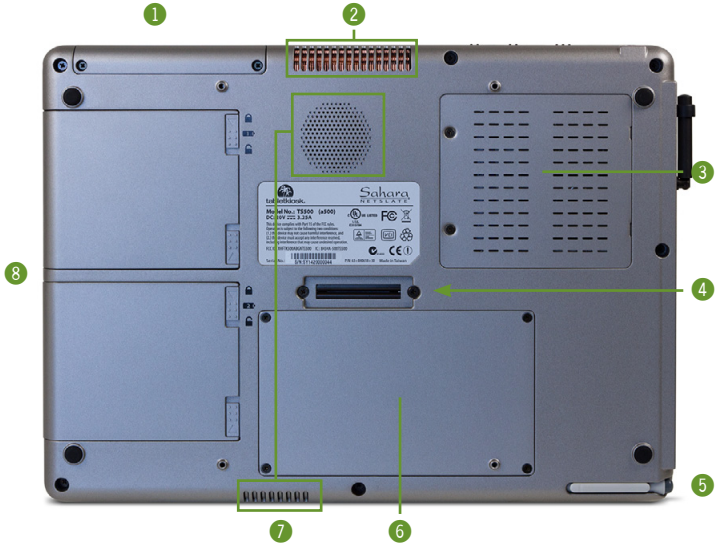
On dual mode tablets, the input screen will automatically switch between touch and digitizer when the digitizer's stylus pen draws near.

3. **Stereo Speakers**

4. **Fingerprint Reader**

5. **Digital Microphone Array**
   Microphone array records stereo audio with higher fidelity for more accurate voice recognition.

Back View



1. **TabletKiosk Expansion Module Port**
   Remove cover to install modular expansion modules
2. **System Ventilation Port**
3. **RAM and 3G Module**
   Door covers SODIMM slot, SIM Card Slot and 3G Module
4. **Docking Connector Port**
   For use with both i500 and i400 compatible docking plates and docking cradles
5. **Stylus Pen in Garage**
6. **Hard Drive/Solid State Drive**
7. **System and CPU Intake Vents**
   Do not block to prevent overheating
8. **Dual Hot Swappable Lithium Ion Batteries**
   Batteries may be exchanged without powering down the system. Do not remove both batteries simulataneously without first attaching to external power supply to prevent data loss.

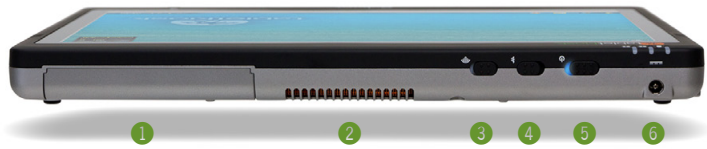
Left View

1. **Carrying Strap Bracket Attachment Port**
   Used with optional shoulder strap or system handle
2. **Antenna Port with External Antenna**
   Auxilary Port enhances 3G and GPS signal reception.
3. **10/100/1000 Gigabit Ethernet Port (RJ45)**
4. **SuperSpeed USB 3.0 Ports (x2)**
5. **Audio Out / Headphones (3.5mm)**
6. **Audio In / Microphone (3.5mm)**
7. **Stylus Pen in Garage**
8. **Function Buttons**
   L1: Secure Attention Sequence (SAS)
   L2: Screen Rotation, [Delete] key in POST/DOS mode
   L3: Volume up or Increase Screen Brightness (user selectable in the BIOS), [→] key in BIOS/DOS mode
   L4: Volume down or Decrease Screen Brightness (user selectable in the BIOS), [↓] key in BIOS/DOS mode

Right View

1. **Battery Bay Two (2) with Lithium Ion Battery Pack**
2. **Function Buttons**
   R1: Top Button turns on/off touch screen
   R2: Wireless Mode Toggle, [Enter] key in BIOS/DOS mode
   R3: User Programmable, [F10] key in BIOS/DOS mode
   R4: User Programmable, [Esc] key in BIOS/DOS mode
3. **Battery Bay One (1) with Lithium Ion Battery Pack**
4. **Anti-theft Kensington Lock Port**
   Use with the locking device (sold separately) to attach the Sahara NetSlate to a desk, table, kiosk, or other stationary apparatus to help prevent the computer from being stolen.
5. **Carrying Strap Bracket Attachment Port**
   Used with optional shoulder strap or system handle

Top View



1. **TabletKiosk Modular Expansion Port**
   Remove cover to install modular expansion modules

2. **System Ventilation**
   Fan exhaust port for expelling hot air from the interior of the Tablet PC. Do not block to help prevent over heating.

3. **WiFi Transmitter Power Switch***
   Slide the toggle switch to activate the wireless networking adapter's transmitter.

NOTE: When not connected to a wireless network, turn off the wireless transmitter to conserve battery power.

4. **Bluetooth Transmitter Power Switch**
   Slide the toggle switch to activate the Bluetooth wireless transmitter. The switch will glow blue when powered on. Slide switch back to turn off Bluetooth.

NOTE: When not actively using a Bluetooth peripheral, turn the Bluetooth transmitter off to conserve battery power.

5. **System Power Switch**
   Slide this switch and hold for 3 seconds to power on the computer or to resume normal operation if the computer is in Suspend Mode. Slide and holding for 6 seconds to immediately turn off the computer.

NOTE: Using this switch to power off the computer is not recommended unless the computer has stopped responding to user input as there is no time for the OS to shut down normally, and as a result, data loss may occur.

6. **DC Power In**
   Plug the AC adapter's connection cable into this port to provide power to the computer.

Bottom View

1. **Docking Cradle Stabilizing Groove**
   Used to help secure the Sahara NetSlate in its docking cradle.
2. **System Ventilation Intake Port**
   Fan intake port for sucking cool air into the interior of the Tablet PC. Do not block to help prevent over heating.

* There are three available wireless modes on the Sahara NetSlate if the optional 3G/3.5G WWAN module is installed. The color of this light indicates which mode the system is currently set to operate (Blue = WiFi, Amber = 3G/3.5G, Purple = Both). You can toggle between the modes by using the Wireless Mode Toggle Function Button (R2) located on the right side of the system.

Sahara
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Chapter 03

Battery Usage and Care

Sahara NetSlate a510 Tablet PCs features two (2) Lithium-Ion batteries that are user replaceable, rechargeable and also hot swappable. This means that you can remove a discharged battery and replace it with a fully charged battery without putting the computer into hibernation mode, or fully powering it off, to prevent data loss.

Depending on your system's configuration and your application usage, a fully charged set of batteries should allow you to run your Sahara NetSlate for 3.0 - 3.5 hours before needing to start swapping them out.

Operations that will significantly reduce battery life include, but are not limited to, the following:

1. Using external bus-powered USB drives such as optical, floppy and hard disk drives.
2. Using wireless communications devices, including the internal WiFi networking card, optional 3G WWAN data module, Bluetooth adapter, or USB Cellular/3G modems.
3. Using high-brightness display settings, 3D screen savers, or other computationally intensive programs such as graphics heavy games, media players and 3D graphics applications.
4. Running the computer in maximum performance mode.
5. Using the computer in overly-hot environmental conditions.

Using the Batteries for the First Time

Before using the Tablet PC on battery power for the first time, the batteries should be fully charged.

On the front of the Sahara NetSlate are two battery status indicators just above the Tablet-Kiosk logo. These indicators will track the charging status of the two Lithium-Ion battery packs located on the back of the tablet (see the chapter entitled ***Touring Your Sahara NetSlate*** for the location of the indicators and battery packs).

Partially discharged batteries will cause the indicators to glow orange when attached to an external power source. When each battery is fully charged, its corresponding indicator will turn green. Be sure that both indicators have turned green before attempting to run the Sahara NetSlate on battery power for the first time.

Calibrating the batteries

After using the system for a while, you may find that battery performance diminishes. This is normal for Lithium-Ion batteries, however if you see a large drop off in capacity, the batteries may simply need to be calibrated.

NOTE: This can happen if the Tablet PC is mostly used while connected in to an external power source. If this is your typical usage model, you should consider calibrating the batteries every month or two to maintain optimal capacity.

To calibrate the batteries, follow these steps:

1. Turn the computer off. Connect the AC adapter and let the batteries fully charge.

2. Disconnect the AC adapter and power on the tablet. Let the batteries run down until the system automatically enters the Suspend/Hibernation mode and shuts down.

3. Reconnect the AC adapter, let the batteries fully charge (so both battery indicators glow green) and then run the computer with the external power still connected for at least a few hours before unplugging and running on battery power.

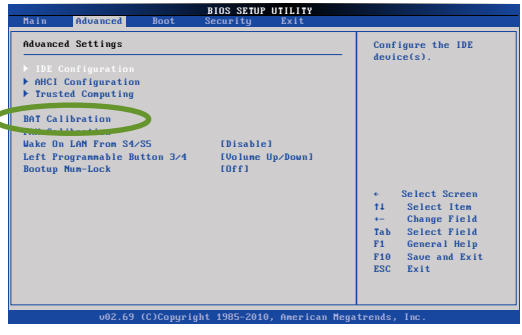
The battery packs should now be properly calibrated. If you find that battery life doesn't correspond to the battery status as reported by your operating system, repeat steps 2 -3 again.

If after performing a calibration for a second time you still find you are having a problem with the battery life, you will need to go into the BIOS and perform a battery calibration.

1. To enter the BIOS, power on or restart your Sahara NetSlate and press the L2 (Screen Rotation) button as soon as you see the TabletKiosk logo.

2. Once in the BIOS, use the L3 button to navigate over to the ***Advanced*** menu screen.

3. Use the L4 button to go down to the ***BAT Calibration*** item.



4. Press the R2 button to enter the Calibration routine. Make sure the Sahara NetSlate is attached to the AC Adapter and that the AC adapter is plugged into an external power source and then press any function button (except L1 and R1) to begin the calibration.

NOTE: This procedure will take a while as the system will discharge the batteries and then charge them again. Make sure you have some time before performing this routine. This routine might be better run at the end of the day.

If you are still having problems, contact your dealer and arrange for replacements.

In general, running the system until a "Battery Low" warning indicator appears and then fully charging the battery (full discharge/charge cycle) will ensure the accuracy of the battery status gauge and prolong the battery's charge efficiency.

Running your system until the batteries are almost totally drained, like described in the calibration routine, on a regular basis is not recommended as it can damage the battery's ability to hold a charge.

Charging the Batteries Under Typical Conditions

When you connect the computer to an electrical outlet, the Smart Battery IC in each battery pack checks its charge level and temperature status. If charging is necessary, the corresponding battery indicator on the front of the tablet will glow orange and the AC adapter will automatically begin charging the batteries.

When a battery is fully charged, its corresponding indicator will change to green and the battery's charge will be maintained while connected to the external power source. When the computer is disconnected from the electrical outlet, the battery indicators will turn off.

NOTE: The time to fully recharge both batteries is approximately 120 ~ 160 minutes when the computer is powered off. The time to fully recharge the battery when the computer is in use varies according to the power requirements of the operations that the computer is performing while charging.

Problems Charging the Battery

Environmental conditions can affect the ability of the computer to charge the battery. If the battery is too hot from either being

used in your computer or being exposed to an overly hot environment, the battery may not charge when you connect the computer to an electrical outlet.

If this occurs, disconnect the computer from the electrical outlet and allow it and the battery to cool to room temperature. Then reconnect the computer to an electrical outlet to continue charging the battery.

Battery Status

Windows 7 has an applet in the Control Panel that will display an icon in the Windows taskbar indicating when the computer is running on battery power or is attached to the AC adapter.

This applet also displays a meter that indicates approximately how much of a charge is remaining in the battery.

Low Battery Warnings

A battery's indicator light will begin blinking orange to alert you to a "Battery Low" status. Typically, this is when the battery has reached a charge level of 10% or less.

When there is only one minute of battery charge remaining, the computer will suspend its current state to the hard drive and power off. Plug in the AC adapter and turn the computer back on to resume your work.

About Battery Usage

Over time, even with proper care, battery performance (the time the battery can operate the computer before needing to be recharged) will decrease. Depending on how often the battery is used, how many times it has been charged and the conditions under which it is used, you likely will need to purchase replacement batteries during the life of your Tablet PC.

IMPORTANT: To avoid damage, only use TabletKiosk replacement batteries. To prevent loss of data, do not remove both battery packs at the same time while the system is powered on unless attached to an external power source. Also, be sure to check the status of each battery before removing it. If you remove a battery and the remaining battery in the system does not retain a sufficient charge, the tablet could power off unexpectedly.

NOTE: Do not dispose of batteries with household waste. When a battery can no longer hold a sufficient charge, call your local waste disposal or environmental protection agency for advice on how or where to dispose a lithium-ion battery.

Real Time Clock Battery

In order to maintain certain system information while the power is off, the motherboard contains a small built-in battery pack that constantly supplies power to the system.

If the computer is left without a power source for long periods of time, this battery can be exhausted and system information can be lost. This will not affect any of your data stored on the computer's hard drive, but rather the settings in the BIOS that tell the computer how to operate. It is recommended, therefore, that if you plan to store the computer for a long time you periodically attach the battery packs, plug in the computer to an external power source and allow the battery to recharge.

If you receive a BIOS error when booting the system for the first time after removing it from prolonged storage, it probably means that the battery's level got too low and the BIOS settings were lost. Enter the BIOS and choose to restore the settings to default. If this does not correct the error, contact your dealer or visit TabletKiosk's website at www.tabletkiosk.com and submit a support request to obtain proper BIOS settings.

Storing a Battery

When storing your computer for an extended period of time, it is recommended that you remove the battery packs and store them in a dry, cool location.

For optimal longevity of the battery packs, it is important to periodically charge them in order to keep their electrons moving. Even charging the batteries for ten to fifteen minutes every 60 - 90 days should be sufficient to keep the batteries in good condition.

Since a battery will slowly discharge during prolonged storage, you should fully charge it before using it again.

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Chapter 04

Using Your Sahara NetSlate with Microsoft® Windows® 7

Tablet PCs are nothing new to Microsoft. Since Windows® XP Tablet PC Edition, Windows has supported pen based computing. A few years later, Windows Vista™ added support for touch while considerably improving pen interaction.

As laudable an effort as those two operating systems were for supporting tablet based computing, Microsoft upped the ante with the release of Windows® 7.

This chapter contains tips and details to help you get the most from your Sahara NetSlate when using Microsoft® Windows 7.

Navigating in Windows® 7 on a Tablet PC

Typically, when working on a Tablet PC, you use a stylus pen or your fingers instead of a mouse and keyboard to interact directly with objects on your screen. You can open, move, edit and delete items — such as icons, files, windows and more — with easy-to-use basic functions similar to those performed with a mouse.

Stylus Pen/Finger Action	Equivalent Mouse Action
Point (pen only)	Move Mouse
Tap	Click
Double-tap	Double-click
Press and hold	Right-click
Drag	Drag

When using the stylus pen, hold it as if you were writing with a standard pen. When using a Sahara NetSlate model that includes a digitizer, simply moving the tip of the stylus a few millimeters above the screen will automatically activate the panel. Without touching the screen, move the stylus around and watch how the pointer (shaped like a diamond instead of a traditional mouse arrow) follows the pen just as if you were moving a mouse.

When you want to select or activate something, simply tap on it. This is the same as clicking the left mouse button. When you are using the system in digitizer mode, feel free to rest your hand on the screen as it will only react to the pen. Be aware, however, if you raise the tip of the pen too far from the screen, it will automatically revert to touch screen mode and the pointer may react to the presence of your resting hand.

When using a stylus or your finger in touch screen mode, instead of sliding the pen or your finger around the screen to move the pointer, simply tap on with what you want to interact. Sliding the pen while lightly touching the tip to the screen will move the on-screen pointer around as if you were using a mouse and holding down the left mouse button. In other words, you would be performing what is known as a drag operation.

To perform a right mouse click in both digitizer and touch screen mode, press and hold on the screen until you see a circle draw around the tip of your pen or finger, then release to perform the actual click.

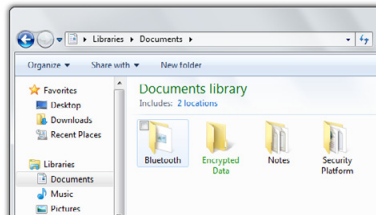
NOTE FOR CAPACITIVE TOUCH SCREEN USERS: Additionally, to perform a right mouse click, you can tap on an object (desktop, icon, etc.) with one finger to select it and then, with you finger still on the screen, tap with a second finger to perform the right-click.

Also, remember that since the touch screen is, by name, sensitive to touch, resting your hand on the screen while navigating with your fingers, or when using a stylus, might make the pointer react unpredictably.

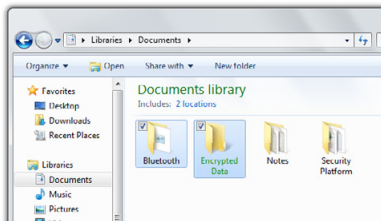
Selecting Multiple Items

Windows® 7 is well aware of how you manipulate items on your computer with a mouse and how selecting multiple items, for such actions as moving or copying, might be a bit more challenging when using a stylus pen or you fingers. That is why Windows® 7 adds a selection check box in the upper left corner of icons and in the far left column of list views.

In digitizer mode, hover over an icon on your desktop or in a Windows Explorer windows and you will see this check box appear. Tap on it to place a check mark in the box. Hover over another icon and, when it appears, tap in its check box.



In touch screen mode, tap an icon to highlight it. The selection check box should appear. Tap in it to add it to the selection.



Now, press and hold either icon and start dragging and you should notice that both icons move together.

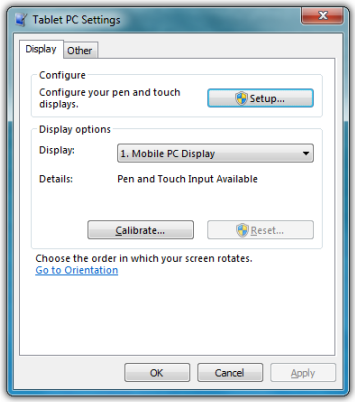
This multiple selection feature works with other types of operations such as cutting, copying and pasting. It also works with editing flicks (see the section ***Editing Flicks*** a little later in this chapter).

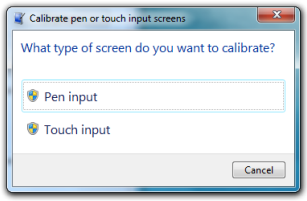
Capacitive Touch Screen Calibration

Often times, out of the box, you will find that the touch screen on your Sahara NetSlate work just fine. Over time you may find that the accuracy of either the touch screen or digitizer may begin to fade. When this happens, it is time to calibrate your screen.

In order to calibrate the capacitive touch screen:

1. Tap on "START → Control Panels → Hardware and Sound → Tablet PC Settings"
2. From the "Display" tab, tap on the "Calibrate..." button.
3. If your Sahara NetSlate only has a capacitive touch screen, you should see the Calibration screen. If you have a dual mode digitizer+capacitive touch screen, you will be presented with a dialog box that asks you whether you want to calibrate for pen or touch. Tap the touch button and the touch calibration screen will appear.





DUAL MODE SCREEN NOTE: To calibrate the touch screen you must use either your finger or a stylus meant for use on a capacitive touch screen. If you attempt to use the digitizer stylus to calibrate the touch screen, you will be presented with an error message.

4. Follow the on-screen instructions to calibrate your screen. Tap in the center of each of the crosshairs that appear and then choose to save or discard the calibration data depending on whether you are satisfied that you accurately touched the center of each crosshair.

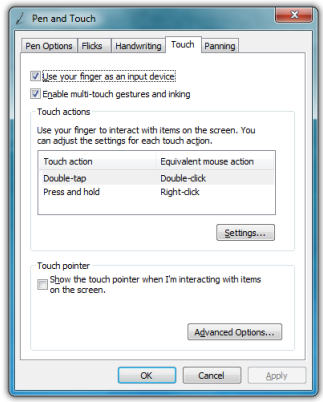
Enabling, Disabling and Adjusting Touch Screen Features

The "Touch" and "Panning" tabs in the "Pen and Touch" control panel are where the settings that control the touch interface reside. To get there, tap on "START → Control Panel → Hardware and Sound → Pen and Touch → Change touch input settings".

The first time you calibrate your screen you will have to tap on 16 target points. Afterward you will only have 4 target points.

Enabling and Disabling Touch Input

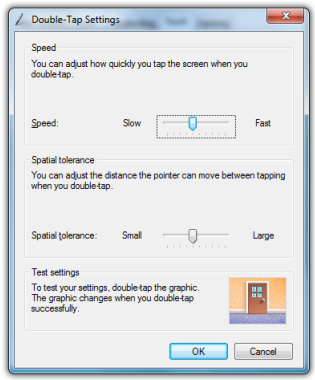
To disable touch input in Windows, uncheck "Use your finger as an input device". Click the "Apply" button and the touch screen will not longer accept any input. Make sure you have a mouse and/or keyboard available to attach to the system if your Sahara NetSlate doesn't have a digitizer panel or you will not be able to control Windows. Re-check the box and click "Apply" to re-enable touch input.



Touch Action: Double Tap Settings

To adjust how fast and how far apart your fingers can be to perform double tap enabled actions, tap on the "Settings" button to open the "Double Tap Settings" control panel.

If you find it is too difficult to perform a double-tap action, adjust the Speed control slider toward "Slow" and the Spatial control slider toward "Large".

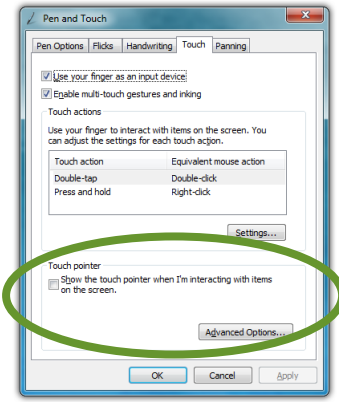


If you find you are often double-tapping when you don't mean to, adjust the Speed slider toward "Fast" and the Spatial slider toward "Small".

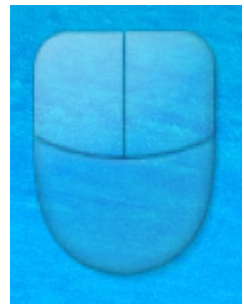
Double-tap on the picture of the door to test your new settings. Adjust the sliders until you can comfortably open and close the door.

Using the Touch Pointer

Because touch screens do not afford the same pointing abilities as a mouse or digitizer pen, performing certain mouse related functions are not always possible (i.e. hovering over a link on a web page). This feature in Windows® 7 essentially removes this limitation.



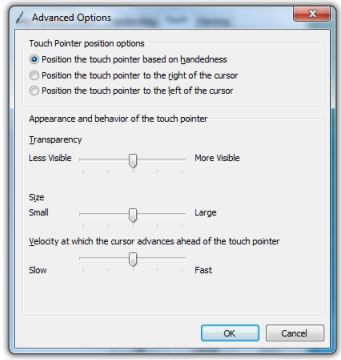
When enabled, by checking the box "Show the touch pointer when I'm interacting with item on the screen", a graphical representation of a mouse will appear near the on-screen pointer (now a standard arrow icon) when you tap somewhere on the screen.



While the mouse is visible, tapping on the left or right mouse button will perform the equivalent action the same as if you clicked with a real mouse. Tapping on the mouse and sliding your finger around the screen will move the pointer just the same as if you were moving a real mouse.

TIP: When using the Touch Pointer to move the pointer arrow around screen, remember to watch the arrow icon for positioning and not the mouse image or your finger.

The “Advanced Options...” button opens a panel that allows the positioning (relative to the pointer arrow), appearance and velocity behavior of the Touch Pointer to be adjusted.

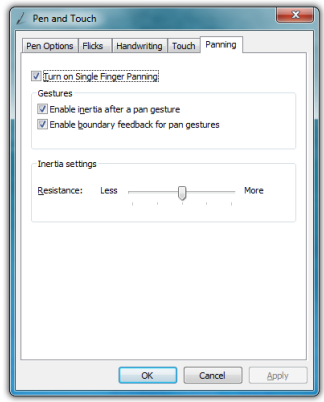


Panning Gesture Settings

Windows allows you to move—or pan—around in a document or window simply by placing two fingers on the screen and then sliding them around. This is the most prevalent and often used touch gesture in Windows® 7.

Disable Single Finger Panning

Because sliding a single finger around on the screen is also used to select text and objects, you might find it less confusing to only allow panning by using two fingers.



To disable panning with a single finger, uncheck the box “Turn on Single Finger Panning”. Simply check it again to re-enable single finger panning.

NOTE: In order to pan left and right with a single finger, you must first pan a short distance up or down to enable single finger panning left and right. This helps prevent accidental selecting and dragging of text or objects around the screen.

Inertia

Inertia is a property of physics that allows for the continuation of movement by an object in motion after the force that propels

the object ceases to exert its affect. Windows inertia functions the same way and can be controlled or even disabled altogether.

Unchecking the box "Enable inertia after a pan gesture" will disable inertia altogether and only allow panning within a document or window to occur while your finger is in contact with the screen and in motion. When the box is checked, a document or window will continue panning even after you remove your finger from the screen.

Inertia allows for more efficient panning within a very long or wide document. How far inertia will continue to scroll the page depends on how far and fast your finger moved.

TIP: The faster you drag your finger(s), the faster and farther your page will pan or scroll.

To allow a document to continue scrolling longer or faster after removing your finger from the screen, adjust the Inertia Settings slider toward "More". For shorter and slower panning after removing your finger from the screen, adjust the slider towards "Less".

To help identify when you have reached as far in a particular direction as you can pan, the document window will bounce back as if running into a wall. To turn off this animated visual cue, simply uncheck the box "Enable boundary feedback for pan gestures".

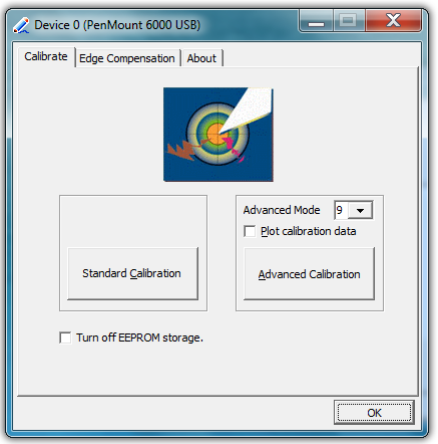
Resistive Touch Screen Calibration

The PenMount Control Panel (accessible via a short-cut on the desktop) allows you calibrate your resistive touch screen, test the calibration data, and then adjust the way your screen processes positional input at the outer edges for maximum usability. The control panel's interface is comprised of three main tabs. The "Device" tab hold the procedures and settings you'll use to configure and calibrate your touch screen, the "Tools" tab is where you can test your screen's calibration accuracy.

Calibrating the Resistive Touch Screen

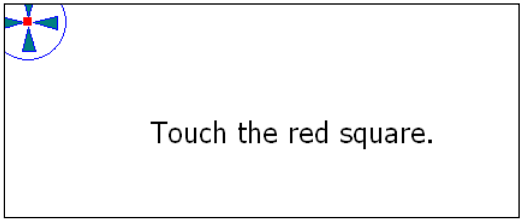
If the pointer isn't properly following the touch of your stylus or finger, you might need to calibrate the touch screen.

1. Open the PenMount control panel and, in the "Device" tab, tap on the "PenMount 6000 USB" icon and then tap "Configure". Alternatively, just double-tap on the "PenMount 6000 USB" icon.
2. Tap on the "Calibrate" tab and then tap on either the "Standard Calibration" or the "Advanced Calibration" button. Most of the time, a Standard Calibration should be sufficient to perform an accurate calibration.



NOTE: If you find the "Standard Calibration" to be too imprecise, the "Advanced Calibration" mode offers 9, 16 or 25 points for calibrating. We suggest starting at 9 points. For both modes, it is highly recommended that you use the stylus, rather than your finger, to produce to most accurate results.

3. Follow the on-screen instructions by pressing and holding on each red square that appears until you are told to lift to proceed. To quit this routine without saving the data, hit Esc on your keyboard if you have one connected, or simply wait a few moments without touching the screen and the test will time out.



Touch each of the red squares that appear on-screen to calibrate the touch screen. Remember to hold your finger or stylus down on the square until it tells you to release.

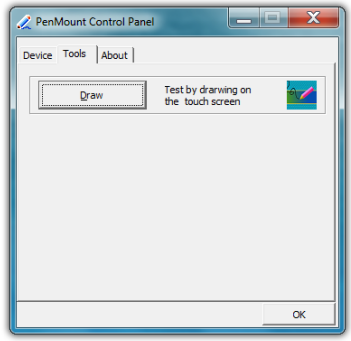
4. When the calibration is complete, you can test the screen accuracy by either tapping around the screen, or using the "Draw" test in the "Tools" tab in the main window of the PenMount Control Panel.

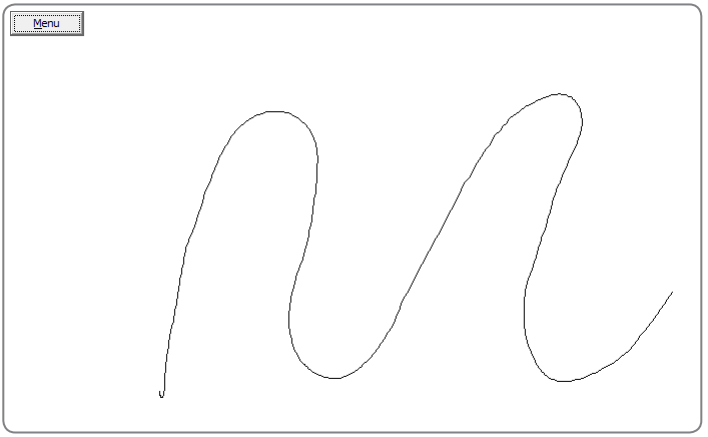
If you check the ***Plot Calibration Data*** option in the "Advanced Calibration" mode, a linearity comparison graph will be displayed after the "Advanced Calibration" is complete. The black lines reflect the ideal linearity assumed by the PenMount control panel, while the blue lines represent the approximate linearity calculated by the calibration.

There may be circumstances where you don't want the calibration data to be stored in the controller. Perhaps you are only running a test, or you want the pre-calibrated state to be restored when you restart the system. In these cases, checking ***Turn off EEPROM storage*** will disable the write-in of calibration data.

Draw Test

Tap on the "Draw" button in the "Tools" tab to test the accuracy of your screen's calibration by drawing on it. Using the "Menu" button in the upper left corner of the test window, you can hide or show a visual grid, display the point coordinates of where you touch the screen—and if a mouse button press occurs— plus clear the screen to start over, and lastly exit the Draw Test.

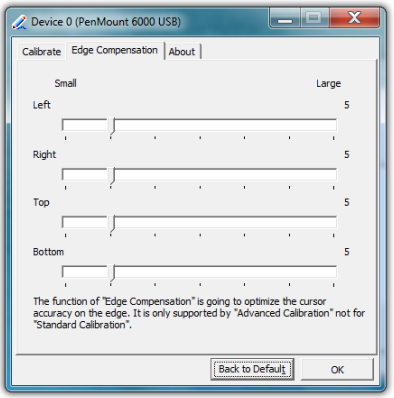




Tapping on the "Draw" button will open the Drawing Test. Tap on the "Menu" button during the test to display a grid overlay, display the point coordinates of where the screen is touched, or to clear the screen so you can start over.

Edge Compensation

The edge compensation sliders are used to adjust your ability to reach the extreme outer edges of the screen. The four sliders in this tab affect each of the four corresponding edges of the screen. Larger compensation numbers will "stretch" reachable points on the screen outward towards the extreme edges, while smaller numbers will pull back the points into linearity.



If you are having difficulty tapping on objects near the very outer edges of the screen, or when you tap near a screen edge the pointer is out of alignment (skewed either towards or away from the edges) try adjusting these controls to compensate.

Configuring and Calibrating the Digitizer

The Electromagnetic Active Digitizer by Wacom® is the highest resolution input panel available on the Sahara NetSlate. In order to switch to it, all you need to do is bring the tip of the stylus pen to within about 10mm of the screen's surface and it will automatically activate. Move the stylus away and, if your system also features a touch screen (either capacitive or resistive) it will automatically switch back.

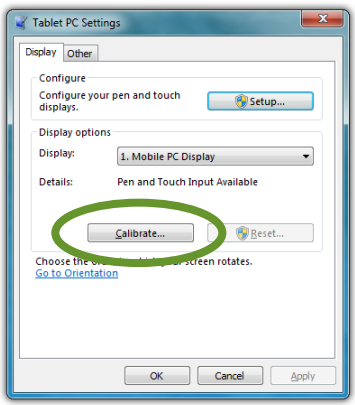
There are a few different control panels in Windows® 7 that configure the way the digitizer functions. The ***Tablet PC Settings*** control panel is where you specify your handedness and where you can go to calibrate the digitizer. The ***Pen and Touch*** control panel is where you can configure tap settings, pen flicks and handwriting recognition. Finally, the ***Pen Tablet Properties*** control panel is where you customize the pen settings and behavior, customize the pen pop-up menu, and also calibrate the digitizer.

All three control panels can be accessed by going to "START → Control Panel → Hardware and Sound".

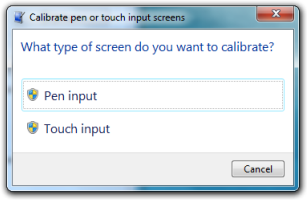
Calibrating the Digitizer

There are two ways of getting to the calibration routine for the digitizer:

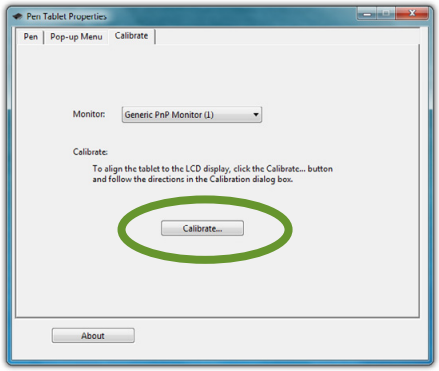
1. In the Tablet PC Settings control panel, tap on the "Display" tab and then tap on the "Calibrate..." button. If your Sahara NetSlate only has a digitizer panel the digitizer calibration screen will appear.

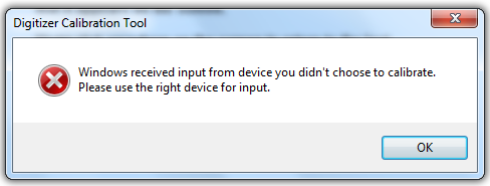


DUAL MODE SCREEN NOTE: If you have a dual mode system that also has a touch screen, a dialog box will appear that asks you whether you want to calibrate for pen or touch. Select "Pen Input" and the digitizer calibration screen will appear.



2. In the Pen Tablet Properties control panel, tap on the "Calibrate" tab and then tap on the "Calibrate..." button to open the digitizer calibration screen.

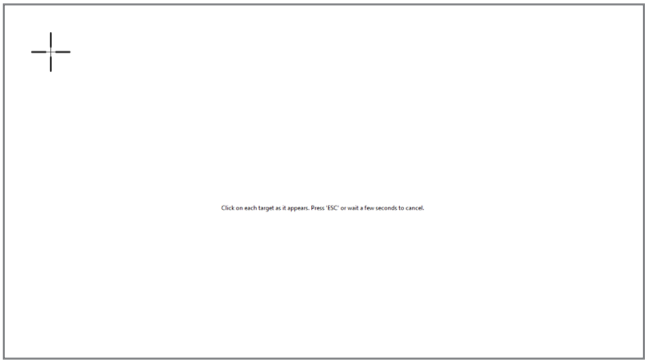




DUAL MODE SCREEN NOTE: To calibrate the touch screen you must use either your finger or a stylus meant for use on a capacitive touch screen. If you attempt to use the digitizer stylus to calibrate the touch screen, you will be presented with an error message.

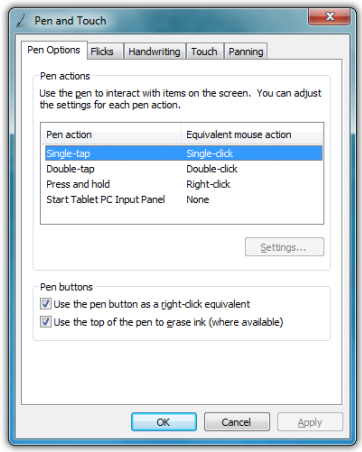
When the calibration screen appears, follow the on-screen instructions by tapping in the center of each crosshair that appears on screen. When you have finished, choose to save the calibration data if you are satisfied with your results. If you think you may have missed the center of some/one of the crosshairs, click "Cancel" to abandon the calibration data and keep the

current calibration settings, or tap “Try again” and repeat the calibration.



Pen Actions

In the “Pen and Touch” control panel on the “Pen Options” tab is a table that lists the pen actions and their equivalent mouse actions, similar to the table at the beginning of this chapter. Below the table is a “Settings...” button that will allow you to adjust the way the pen performs these actions (all except single-tap which has no settings options).



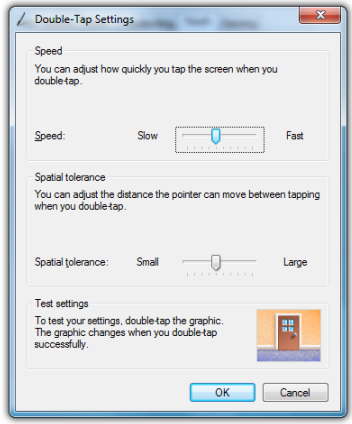
Double-tap

Adjusts how fast and how far apart your pen taps can be on screen to perform double tap enabled actions.

If you find it is too difficult to perform a double-tap action, adjust the Speed control slider toward “Slow” and the Spatial control slider toward “Large”.

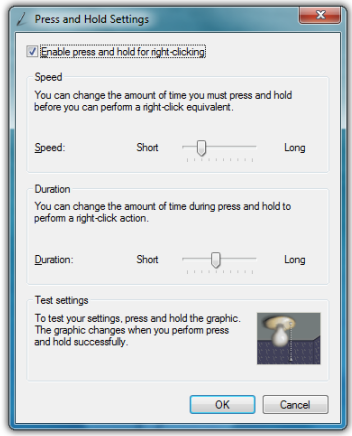
If you find you are often double-tapping when you don't mean to, adjust the Speed slider toward "Fast" and the Spatial slider toward "Small".

Double-tap on the picture of the door to test your new settings. You can continue to adjust the sliders until you feel comfortable opening and closing the door.



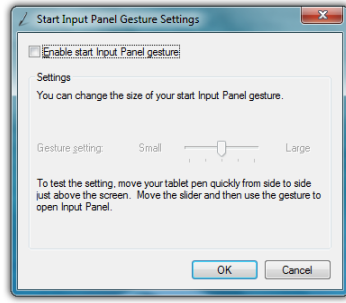
Press and Hold

Enables and disables the ability to perform a right-click by pressing on the screen and holding. You can also adjust how long you must keep your pen pressed to the screen before the circle appears and draws around the tip of the stylus (Speed), and how long you can keep the pen pressed to the screen and still perform the right-click when you release (Duration).



Start Tablet PC Input Panel

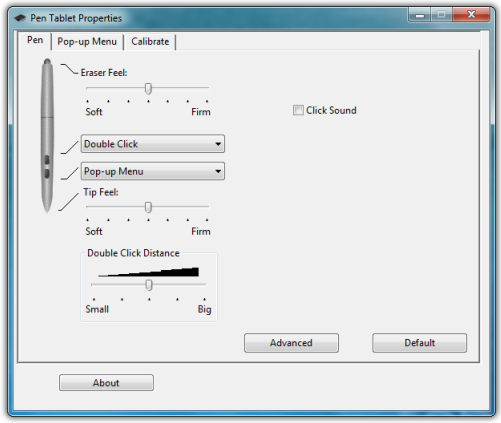
Enables and disables the ability to invoke (and subsequently close) the Input Panels by simply flicking your stylus side-to-side, three times above the screen. You can adjust how long of a side-to-side motion you must make with the "Gesture setting" slider.



Pen Configuration

Using the Pen Tablet Properties control panel, you can adjust:

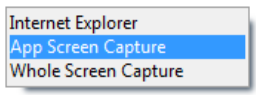
- How hard you must press the eraser and pen tip to adjust the width of the lines they draw and erase (this is known as pressure sensitivity)
- What action the pen button performs (if your stylus has only one button, it is programmed with the lower button on the control panel)
- How close together you must click on screen to perform a double-click (same as "Double-tap" setting in the "Pen and Touch" control panel)
- Whether or not your system alerts you each time you tap on the screen with the stylus by making a clicking sound.



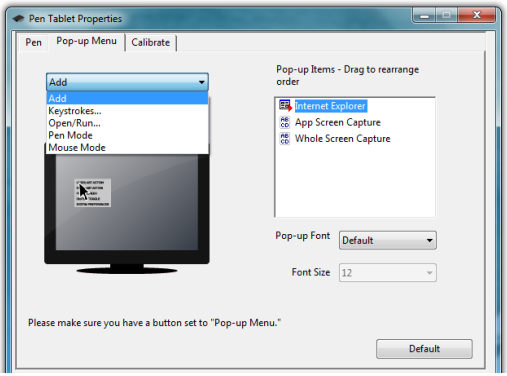
The Pen Tablet Properties control panel gives you access to the stylus pen's advanced functionality provided by Wacom® digitizers.

Pen Pop-up Menu

The pen pop-up menu is a handy little feature where you can set up a menu of keyboard commands and program short-cuts that will appear near the tip of your stylus when invoked.



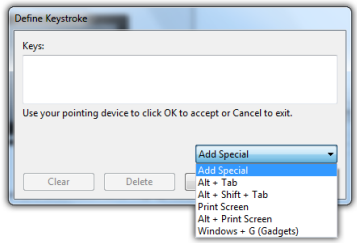
NOTE: You can also set the digitizer to work in either pen (absolute positioning coordinates) or mouse (relative positioning coordinates) behavior mode, but we recommend leaving your digitizer in pen mode as mouse mode can be a bit confusing for most people.



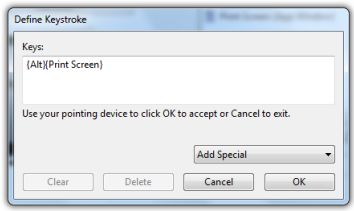
The "Add" dropdown menu lets you select keystroke commands or program shortcuts to add to the Pen Pop-up Menu. In order to invoke it, remember to set the pen button to "Pop-up Menu".

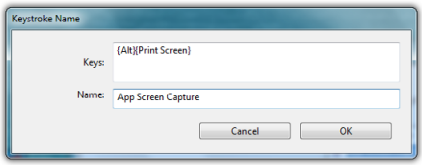
Adding a command to the menu

1. Tap on the "Add" drop down menu and select "Keystrokes..."
2. Tap on the "Add Special" drop down to choose from a predefined list, or use either the on-screen or a USB keyboard, to enter your own custom combination (including modifier keys). Tap the "OK" button to accept the keystroke combination.
3. Enter the name, as you would like it to appear in the pop-up menu, into the "Name" field. Tap the "OK" button to add it to the pop-up menu.



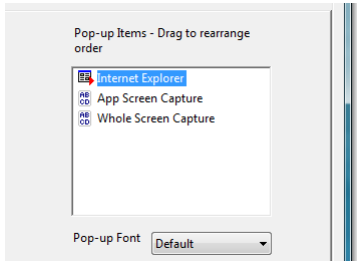
Choose a key combination from the menu or enter your own from a keyboard.





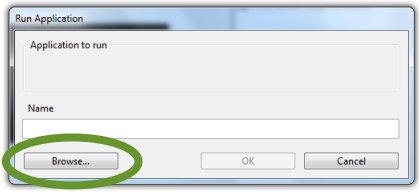
Enter a name for the keystroke short-cut as you want it to appear in the Pen Pop-up Menu.

4. Repeat as many combinations as you like and then go to the "Pop-up Items" field and drag them into the order you would like them to display in the menu.

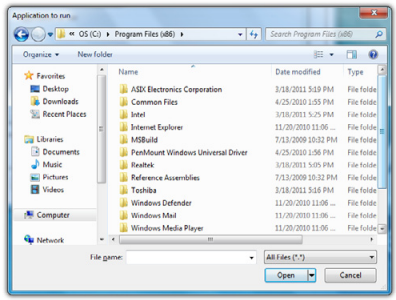


Adding a Program Short-Cut to the menu

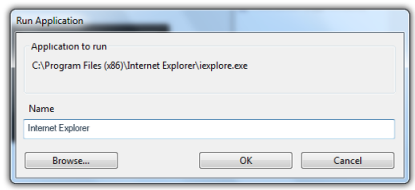
1. Tap on the "Add" drop down menu and select "Open/Run..."
2. Tap on the "Browse..." button to open the "Application to run" dialog box and then navigate to the application you which to add and double-tap on it.
3. Enter the name, as you would like it to appear in the pop-up menu, into the "Name" field. Tap the "OK" button to add it to the pop-up menu.
4. Repeat for as many short-cuts you want to add and then go to the "Pop-up Items" field and drag them into the order you would like them to display in the menu.



Tap the "Browse..." button to open the "Application to Run" dialog box.



Navigate to the application you wish to add and then double-tap on it.



Change the program's name in the "Name" field to whatever you'd like it to display as in the menu.

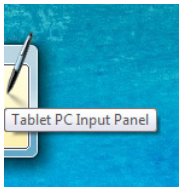
Entering Text with the Tablet PC Input Panel

Complementing Microsoft's Digital Inking handwriting recognition technology is a special application called the Tablet PC Input Panel that accepts, and then converts handwriting into text, as well as provides a compact and convenient on-screen keyboard.

Typically the Input Panel sits docked just off the left side of your screen. Tap the edge of the panel to display the on-screen writing pad and keyboard. These input tools allow you to enter information directly into any application that accepts standard keyboard inputs.

By default, the Input panel sits docked on the left side of the screen.

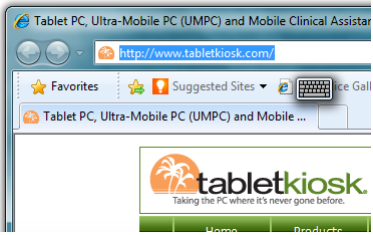
Hovering your pen over the edge of the of the Input Panel will slide it out a bit, making it easier to activate.



NOTE FOR DIGITIZER USERS: By default, when using an Active Digitizer, the panel will be hidden until you bring the tip of the stylus near the screen. The edge of the panel will sit, just visible, at the edge of the screen. Hovering your pen over that edge of the Input Panel will cause it to slide out a bit making it easier to activate.

When using an application which is pen aware (at this time, most are) simply tapping where you would like to enter text will place an I-beam cursor and display a tool tip icon of the Input Panel. Tapping on this icon will open the Input Panel automatically.

Writing Pad Tooltip with the text insertion I-beam cursor.

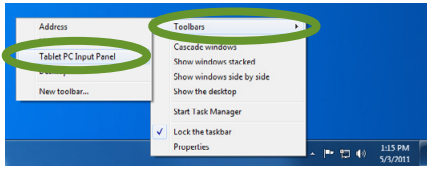


Keyboard Tooltip with text selected. The tooltip that appears will be determined by the current mode of the Input panel.

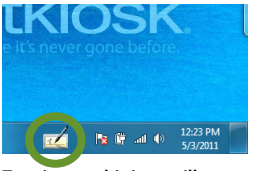
NOTE FOR TOUCH SCREEN USERS: This also works with a touch screen. Just tap where you would like to enter text and an icon of a keyboard will appear. Tap on it to bring up the on-screen keyboard and type in your text. You can also switch to the Writing Pad to hand-write if you have a stylus, but fingers don't typically work well for inking.

If your Sahara NetSlate a510 doesn't have an Active Digitizer, or the Input Panel isn't docked on the side of the screen and you want to be able to display it:

1. Press and hold on a blank space on the Windows Taskbar to call up a context menu.



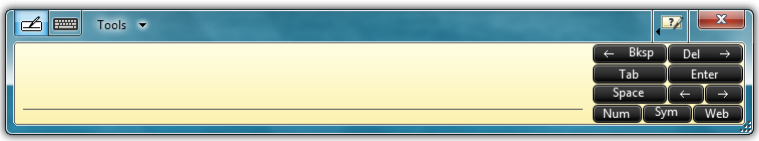
2. Tap on the top option entitled "Toolbars" and then tap on "Tablet PC Input Panel" option on the panel that appears. This will place a permanent button on the Taskbar next to the System Tray that will easily allow you to call up the panels whenever you like.



Tapping on this icon will open the Input Panel.

Writing Pad

This pad allows you to enter text on a word-by-word or character-by-character basis. You write on the lines inside the Writing Pad just as you would write on a lined piece of notepaper. When you reach the end of the line, the pad will expand automatically, adding another line, so you can keep on writing without having to stop. Windows will convert your handwriting into text on the fly as you write, and then insert it in the appropriate location when you tap the "Insert" button at the bottom right of the panel.

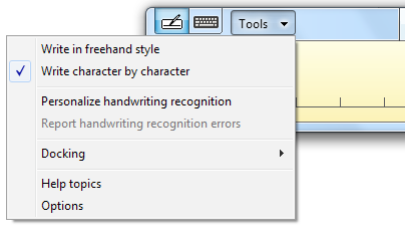


Writing Pad in its default state. Has a line for writing and buttons on the right for editing.

After you have entered some text, the "Insert" button will appear on the bottom of the panel that will allow you to place the text into your document.

Tools Menu

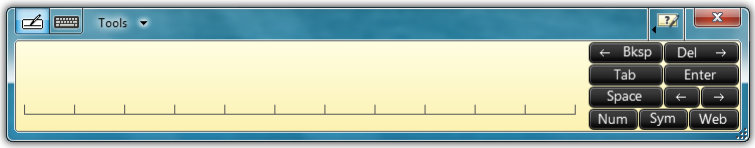
To switch between word-by-word and character-by-character modes, tap on the "Tools" drop down menu on the Input Panel Title bar. From the drop down menu, choose the mode you wish to use.



You can also use this menu to invoke Windows Handwriting Personalizer, adjust where you want the input panels to appear on the screen, undock the panel to move it anywhere on the screen, or open the panels' "Options" menu.

Character-by-Character Mode

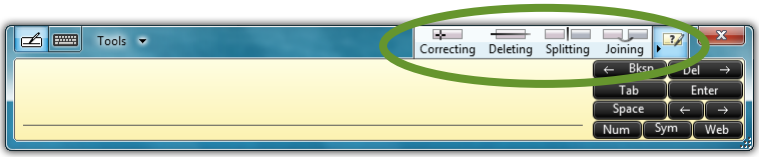
This mode accepts input on a character-by-character basis and is useful for entering information that requires a higher level of precision, such as passwords, website URLs or e-mail addresses.



Help with Editing Handwritten Text

The Writing Pad, in both freestyle and character-by-character mode, supports a number of pen gestures that allow for dynamic editing and deleting of text as your are writing in the Input Panel. The gesture help button is located on the title bar of the

Input Panel just to the left of the "Close" button. Tapping on this bar opens a panel with buttons that, when clicked on, illustrate how to accomplish a particular editing action.



The "Help" button in the title bar houses a panel containing additional buttons that demonstrate how to perform the different editing gestures in the Writing Pad.

On-Screen Keyboard

Use it the same way that you would use a standard keyboard. By tapping on its keys, you can enter letters, numbers and symbols into documents and text fields, as well as perform specialized functions and keyboard short cuts. This panel can be re sized, increasing or decreasing the size of the individual keys. Windows will always remember how you size the keyboard panel for the next time you open it.

Input Panel Standard Keyboard. Can be resized to better support fingers or the stylus pen. Buttons in the upper left corner of the panel switches between on-screen keyboard and writing pad.

Input Panel Extended Keyboard adds eight function keys to the right side of the panel. Extended Keyboard mode switch is located in the "Tools" menu.

Tools Menu

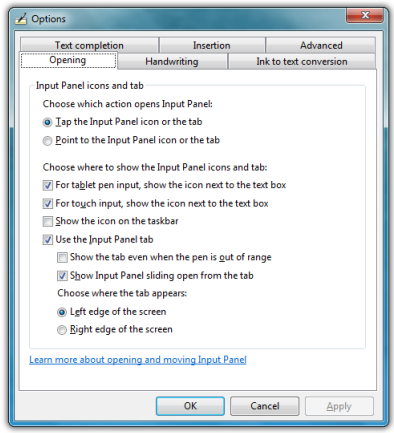
The Tools menu on the keyboard allows you to switch between the standard and expanded keyboard modes, dock or float the keyboard, and open the Input Panels' "Options" menu. Additionally, you can get more information about using the Input Panels by tapping on the "Help topics" menu item.

Input Panel Options

The Options panel contains six tabs that house all of the configuration options for controlling how the input panels work.

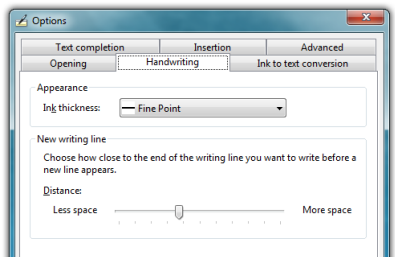
Opening

This tab contains the option to open the Input Panels by tapping or simply pointing at the panel tab with the digitizer stylus. It also has options for where to show the Input Panel's tool tips and tab, when to show and whether to hide the Input Panel and where to dock it. A link at the bottom of this tab will open a help window that explains in detail about moving and opening the Input Panels.

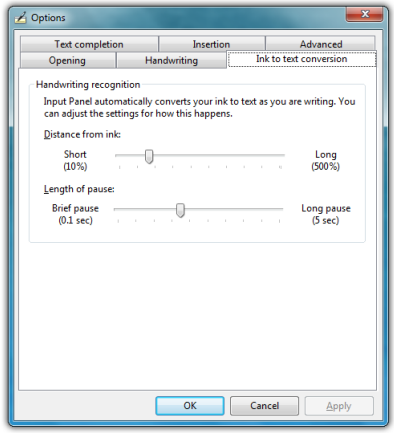


Handwriting

This tab contains an option for how thick you want the ink to appear as you are writing on the panel. It also has an option for how close you must get to the right edge of the Writing Pad before an additional line will appear.



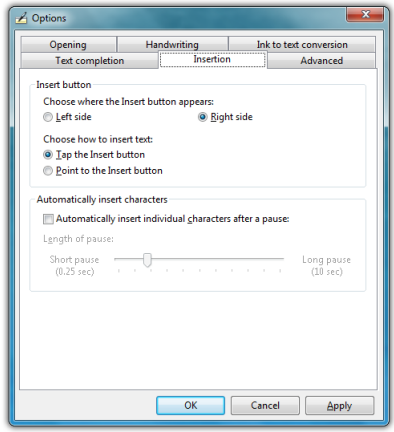
Ink to text conversion



This tab has options for adjusting when the Input Panel will automatically convert your handwriting to text as you are writing. The "Distance from Ink" slider determines how far away your stylus must move from the text you are writing before converting the text, while the "Length of pause" slider adjusts how long it waits, after moving your stylus away from the text, before converting it.

If you find that the panel waits too long to convert your text, or conversely is converting your text while you are still in the middle of writing a word, these two sliders in conjunction will improve your handwriting experience.

Insertion



This tab lets you decide whether to display the Input Panel's "Insert" button on the left or right side of the bottom of the panel as well as whether to insert the text when you simply point at the button (i.e. mouse over) or have to tap on it.

Additionally, you can choose to have your text inserted all at once, or letter by letter determined by a specific pause duration.

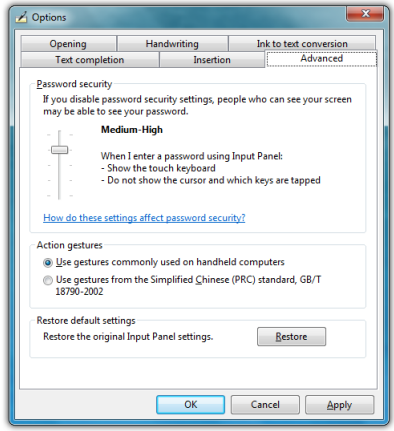
Text Completion

This tab allows you to turn off and on AutoComplete and Predictive text options. These options work much the same way as they do on smartphones.

Advanced

This tab lets you change the Password security level, altering the way the Tablet PC Input Panel and the on-screen keyboard displays text and key presses when inputting passwords. For added security you can choose to hide the input as you write or type.

You can also choose to use Action gestures as they are used on common handheld computers or gestures from the Simplified Chinese (PRC) standard, GB/T 18790-2002.



Password Security settings allow you to hide your input on the writing pad and the on-screen keyboard while typing in passwords.

The "Restore" button returns the Input Panel to its default settings.

If, after experimenting with any of the panel's settings, you would like to return the Input Panel to its default configuration, just tap the "Restore" button located near the bottom of the "Advanced" tab.

Improving Handwriting Recognition

Windows® 7 includes several utilities designed to improve upon its default handwriting recognition accuracy. To begin training Windows to better recognize and translate your handwriting, from the Input Panel, tap on "Tools → Personalize Handwriting Recognition" to open the "Handwriting Personalization" application.

NOTE: You can also access the Handwriting Personalization application from the START Menu under "All Programs → Accessories → Tablet PC".

There are two different training utilities:

Target specific recognition errors does spot training on letters and numbers that usually account for the most common translation errors. Choose this training if for the most part Windows is correctly recognizing your handwriting with the exception of a few different characters.

Teach the recognizer your handwriting style is a total handwriting training session. You will be presented with a series of sentences to write that will cover all letters, numbers and symbols. This thorough training is more time consuming and only necessary if you find Windows's ability to translate your handwriting to be poor.

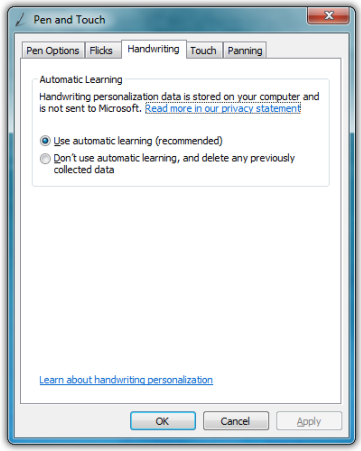
Links at the bottom of this panel are short-cuts to performing some other handwriting optimation tasks. You can also learn more about handwriting recognition personalization by tapping on the bottom most link.

Automatic Learning

Another feature Windows® 7 offers to improve handwriting recognition is handwriting personalization through "Auto-

matic Learning". This enables Windows to learn your handwriting on the fly as you write. This feature is enabled by default, so if you are the primary user of your Tablet PC you don't have to do anything to enable it.

If your Sahara NetSlate is going to be used by many different people, you may want to disable this feature and delete any user specific handwriting personalization data in order for Windows to recognize the widest variety of handwriting.

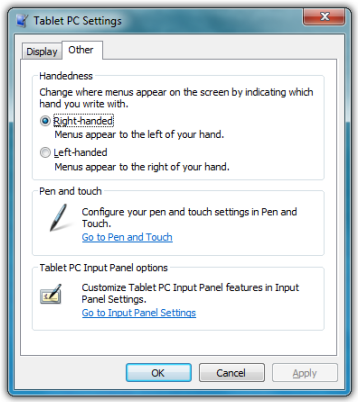


You can disable automatic learning if more than one person will regularly use the Tablet PC in order to keep Windows generic handwriting recognition settings.

To disable Automatic Learning go to "START → Control Panel → Hardware and Sound → Pen and Touch". Tap on the "Handwriting" Tab and choose "Don't use automatic learning, and delete any previously collected data".

Handedness

Lastly, telling Windows which hand you write with will also improve handwriting recognition, as well as adjust where pop-up menus and tool tips appear. To tell Windows your handedness, tap on "START → Control Panels → Hardware and Sound → Tablet PC Settings" and then on the "Other" tab, select whether you are right or left handed.



Informing Windows of your handedness also improves handwriting recognition.

Using Gestures to Improve Productivity

When using Windows® 7 on a standard laptop or desktop PC, many people take advantage of added efficiency provided by keyboard short-cuts. Tablet PC users have another way to improve efficiency while working by using Windows® 7 built-in screen gestures to open applications, close applications, move data between applications, and navigate within applications.

Windows has two different types of gestures depending on the type of input screen used: ***pen gestures*** and ***touch gestures***.

Pen Gestures

In the world of pen computing, a gesture is a quick movement of the pen that invokes specific short-cut actions normally completed by the press of a key on a keyboard. For example, you can enter a space, you can delete text and you can enter a line return. These actions are accomplished in the Input Panel.

At the top on the input panel, just to the left of the close button, is a button that shows how to accomplish a series of gestures. Tap on an individual gesture to display a short movie that demonstrates how to perform the gesture.

Another series of gestures you can invoke with a pen are known as "flicks". There are two categories of flicks, ***navigational flicks*** and ***editing flicks*** and are used independently of the input panel anywhere in Windows.

Navigational Flicks

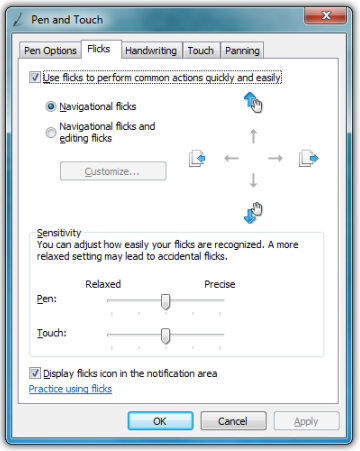
There are four default navigational pen flicks in Windows® 7:

Flick Direction	Action Performed
Up	Page Up
Right	Back
Down	Page Down
Left	Forward

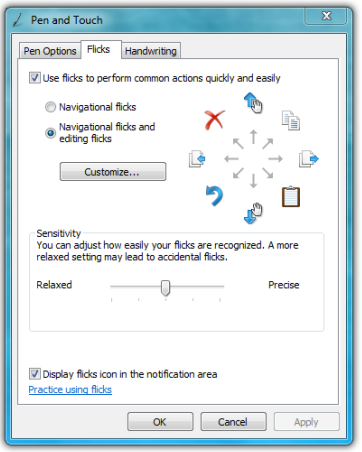
Editing Flicks

In addition to the above flicks, there are four default edit flicks:

Flick Direction	Action Performed
Up Right	Copy
Down Right	Paste
Down Left	Undo
Up Left	Delete



The four default navigational flicks are enabled in Windows® 7 by default. Editing flicks must be enabled in order to customize pen flicks.



The four editing flicks can be enabled using the option box in the Pen and Touch Control Panel. Tap the "Customized..." button to edit their actions.

Four navigational flicks are enabled by default in Windows® 7. The four edit flicks will need to be turned on if you want to utilize them. The do this:

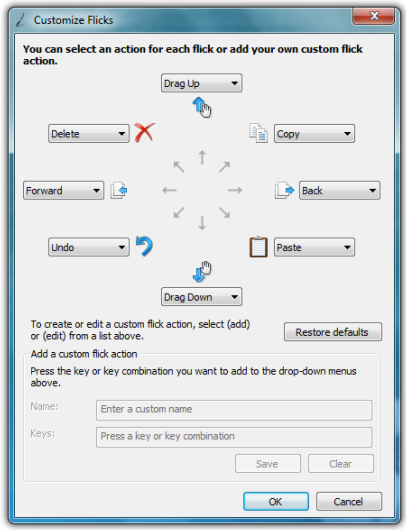
1. Tap on "START → Control Panels → Hardware and Sound → Pen and Touch" to open the Pen and Touch control panel.
2. From within the Pen and Touch control panel, tap on the "Flicks" tab.

3. At the top of the tab there is a check box that should be selected called "Use flicks to perform common actions quickly and easily". Below it are two option boxes, select "Navigational flicks and editing flicks" to enable both types of flicks.

NOTE: To disable flicks altogether, uncheck the top check box "Use flicks to perform common actions..."

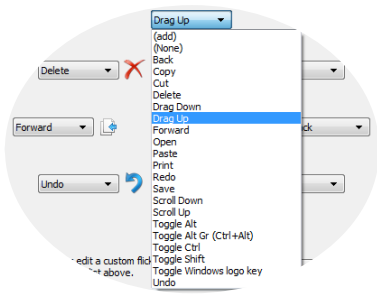
You'll know you have successfully invoked a pen flick as the name and icon representing the flick will fade in briefly on your screen where you actually performed the pen flick gesture.

Customizing Pen Flicks



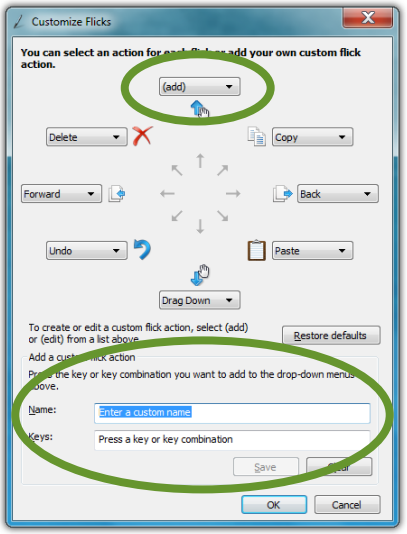
If you would like to assign different actions to any of the eight (8) flick directions, you can do so by tapping on the "Customize..." button in the "Flicks" tab of the "Pen and Touch" control panel. In order to gain access to the "Customize..." button, both navigational and editing flicks must be enabled. If you do not want to have all eight flick directions enabled, you can choose to disable whichever ones you like in the customize panel.

In the customize panel, you can modify the action of any flick direction either by choosing a predefined action—of which there are 19—in a flick direction's drop



down menu or by creating your own custom action. To create a custom action:

1. Choose "(add)" from the specific direction's drop down menu.
2. At the bottom of the panel are two fields that should now be active. Tap in the top field labeled "Name:". Enter the name you would like for the action you are about to create by tapping on the keyboard tool tip that appears. This is the name that will display in the drop down menu and as a tool tip when you invoke the flick action.



3. Either tap on the "Tab" key in the on-screen keyboard or tap on the "Keys:" field to switch focus to it and then enter your desired keyboard key combination for the action you want to create. For example, tap on the [Windows] modifier key and then the [E] key to open the Windows Explorer.
4. Tap the "Save" button to save your custom flick action.

When you are done customizing all of your flicks, tap on the "OK" button at the bottom of the panel to return to the "Pen and Touch" control panel and then tap on the "Apply" button to activate and test your flicks.

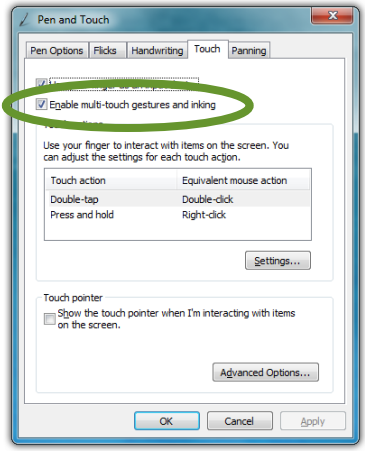
Touch Gestures

As the name implies, touch gestures are meant to be used when navigating on a touch screen. Windows Touch enables several gestures that support both single and multi-touch contacts.

Standard Windows multi-touch gestures only support capacitive touch screens.

Enabling and Disabling Multi-Touch Gestures

Many of the most useful gestures built into Windows® 7 require two finger touch. To disable these behaviors, simply uncheck the box “Enable multi-touch gestures and inking”.



Panning with (or without) Inertia

Panning is similar to scrolling up/down or left/right on a page with a mouse, except it is easier and more natural. You can use either one or two fingers to pan up or down, but you must use two fingers to pan left and right.

Simply place your finger tip or stylus on the page and move your finger in the direction you want to page to pan. To pan rapidly in a particular direction, swipe your finger and remove it from the screen.

Selecting / Dragging

This is similar to dragging with a mouse to select elements such as text. Using one finger, drag to the left or right over the objects or text you wish to select.

Zooming

Using two fingers, place them on the screen and then pinch them together to zoom out for a larger view, or spread them apart to zoom in for a closer view.

Rotating

Place two fingers on the screen and then rotate them clockwise or counter clockwise to rotate an object such as a photo or PDF

document. Alternately, you can place two fingers on the screen and then rotate one finger around the other in either a clockwise or counter clockwise direction.

Two Finger Tap

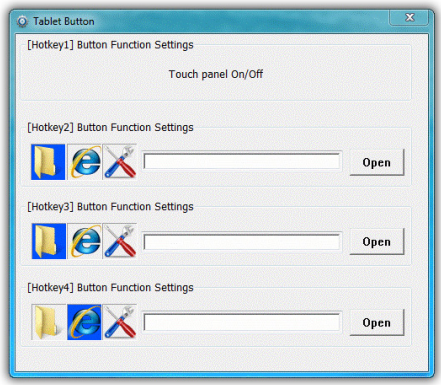
Tap two fingers on the screen around where your intended target is the midpoint in order to zoom into that area to perform actions on small objects such as tapping on a text link in a web page.

Flicking

Flicking is a quick horizontal or vertical swipe to scroll up and down or page forward or backward. To scroll down a web page, for example, flick up on the page with one finger. To page forward or backward, swipe to the left or right.

Programming the Function Buttons

Your Sahara NetSlate has two or three user-programmable function buttons located on the right side of the system, depending upon your system's configuration. You can use the "Tablet Button" control applet, located in the system tray, to reprogram the buttons to activate a different pre-programmed task, or to launch an application of your choice.



The first function button (R1) toggles the touch screen on and off.

To launch an application, tap on the tools icon (rachet and wrench) of the appropriate function button you wish to program and then tap the "Open..." button to select the application. If the tools icon is not selected, the application listed in the text window will be ignored.

Connecting to the Internet

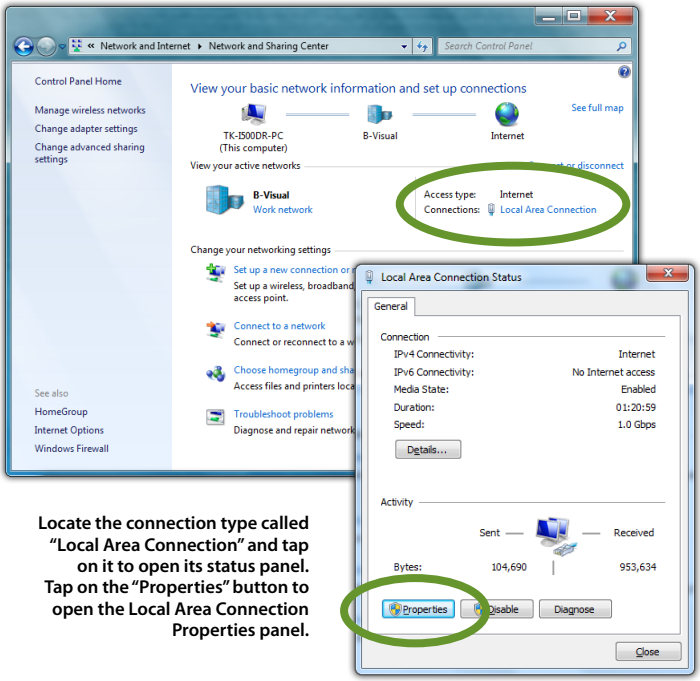
Your Sahara NetSlate allows you to connect to the Internet in different ways. The ways vary depending on the user's networking environment as well as personal preference and available equipment. This section outlines two of the most common ways:

1. Using a wired LAN (Local Area Network)
2. Using a wireless LAN

Using a Wired LAN

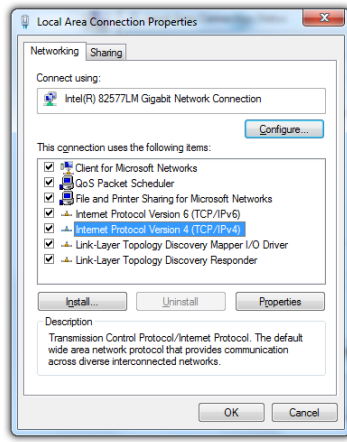
To connect to the Internet via a wired LAN environment, typically an Ethernet port or a broadband modem must be within the reach of the networking cable you are using.

1. Connect an Ethernet networking cable into the LAN port of your Sahara NetSlate and then connect the other end into your broadband modem or the appropriate LAN port as instructed by your network administrator.
2. If your network or Internet Service Provider (ISP) uses a Dynamic Host Control Protocol (DHCP) server (as many do) you should find that you can already connect to the internet. If not, continue to the next step.
3. Tap on START → Control Panel and then tap on "View network status and tasks" under the "Network and Internet" category.
4. Under "View your active networks" in the window, look for "Access type Connections" and make sure that the "Local Area Connection" is visible. If not, recheck that your networking cable is properly connected, or contact your network administrator.
5. Tap on the "Local Area Connection" link and then tap on the "Properties" button from the "Local Area Connection Properties" window that appears. If Windows asks you for permission to continue, tap on the "Continue" button.

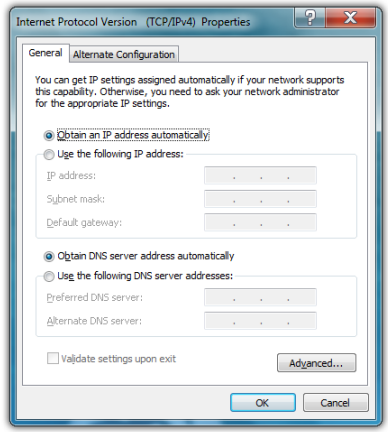


Locate the connection type called "Local Area Connection" and tap on it to open its status panel. Tap on the "Properties" button to open the Local Area Connection Properties panel.

6. On the Networking Tab, you'll see a list box called "This connection uses the following items:" Select "Internet Protocol Version 4 (TCP/IPv4)", and tap the "Properties" button to open the "Internet Protocol Version 4 (TCP/IPv4) Properties" window.



7. If DHCP is used on your network, tap “Obtain an IP address automatically” and “Obtain DNS server address automatically”. Otherwise, enter the correct IP and DNS server addresses by selecting the two options that begin with “Use the following…” If you are unsure of which option to use, contact your network administrator or your Internet Service Provider (ISP).



8. After entering the correct information in the “Internet Protocol (TCP/IP) Properties” window, tap “OK” to accept your changes and close the window.

9. Repeat steps 5 through 7 selecting “Internet Protocol Version 6 (TCP/IPv6) this time if your network supports it.

10. If you need to specify additional DNS servers, WINS servers or gateways, tap on the “Advanced...” button to open the “Advanced TCP/IP Settings” panel.

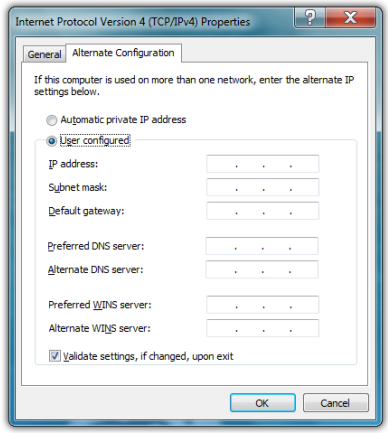
11. Tap “OK” in the “Local Area Connection Properties” window to finish and accept the changes.

Using Both DHCP and a Static IP Address

If you are using alternating networks with either DHCP or static IP addressing, you can use alternative settings that will enable simultaneous configurations of both DHCP and a static IP. This will allow you to connect to both of the networks without having to reconfigure each time you want to switch.

1. Follow steps 1 through 7 above when using a wired LAN connection.

2. Tap on the "Alternate Configuration" tab and select the "User configured" option. Enter the correct values in the appropriate fields. If you are unsure of which values or options to use, contact your network administrator or the technical support line of your ISP.

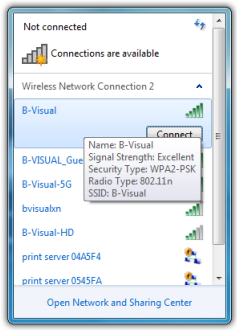


3. When you have completed the entire configuration, tap "OK" to accept the settings and close the panel.

Using a Wireless LAN

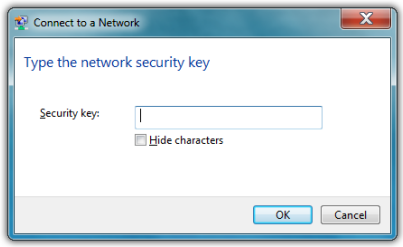
The WiFi wireless network adapter built into your Sahara NetSlate a510 is compatible with 802.11a/b/g/n wireless networks, and therefore can connect to wireless routers or access points that support any of these standards.

1. Turn on the WiFi transmitter using the toggle switch on the top of your tablet.
2. In the System Tray on the Windows Task bar find the wireless networking connection icon ( ) and tap on it to bring up the Wireless Network Connection list.
3. From the list that appears, choose the network you wish to connect to and tap the "Connect" button. If no wireless networks appear after a few moments, tap on "Refresh" icon above the network list on the right side of the panel.



NOTE: If you want to connect to this network automatically whenever Windows detects it, make sure the "Connect Automatically" check box has a check in it.

4. If the wireless network you are attempting to connect to is security-enabled, you will see a dialog box requesting a network security key. Enter the proper key and then tap "OK".



Most failures to connect to a wireless network occur because the network security key has been improperly entered. Be very careful when entering this security key. If you do not know the correct security key to enter, or still can't connect after entering the security key properly, contact your network administrator or the technical support line of your ISP.

Bluetooth® Wireless Connectivity

Bluetooth® is a short-range wireless technology you can use to transfer data between your Sahara NetSlate and other wireless devices that use Bluetooth, such as wireless keyboards and mice, cell phones, PDAs and even printers. Bluetooth-enabled devices can communicate with each other, without cables, up to a distance of approximately 10 meters (or about 30 feet).

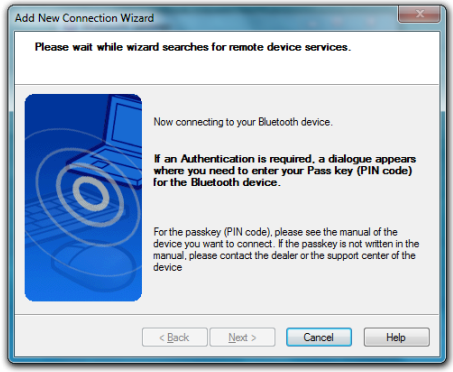
NOTE: The wireless range can be shortened from interference caused by other wireless devices and/or by walls made of dense building materials.

To connect to a Bluetooth® enabled device:

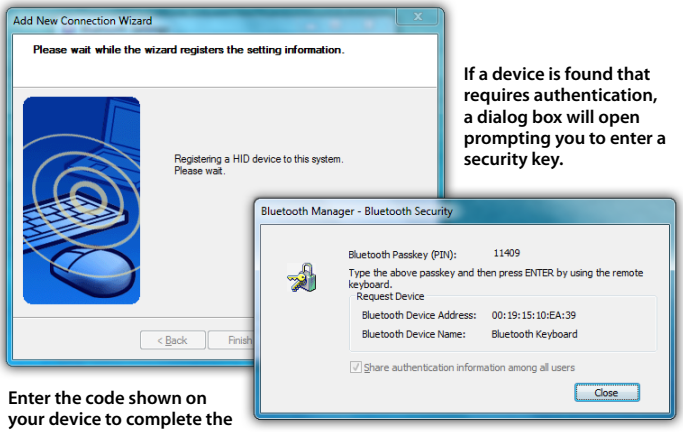
1. Turn on the Bluetooth transmitter using the toggle switch on the top of your tablet.
2. If the Bluetooth Assistant is running, simply turn on your Bluetooth device and place it into Discoverable mode (see your Bluetooth's device's instruction manual for information on how to do this). After a few moments, the Bluetooth Wizard should start up. *Skip to step 4.*

3. If the Bluetooth Assistant is not running, tap on "START → All Programs → Bluetooth → Add New Connection". Make sure your Bluetooth device is powered on and in Discoverable mode.

4. The Bluetooth Wizard will search out all Bluetooth devices within range that are set to be discoverable. If there is only one device found, it will automatically begin the pairing process. If there is more than one discoverable device found, it will open a window prompting you to choose which device you would like to pair with your Tablet PC.

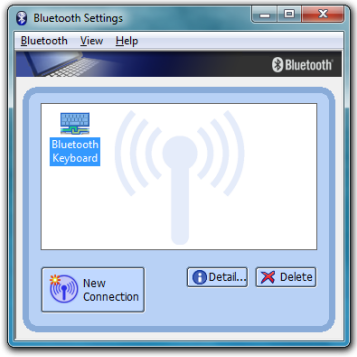


5. If the device you are pairing requires a security code to be entered, a window will open asking you to enter the requested PIN.



If a device is found that requires authentication, a dialog box will open prompting you to enter a security key.

Enter the code shown on your device to complete the pairing procedure.

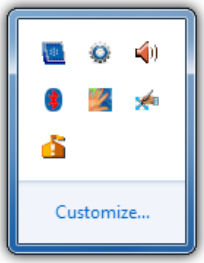


6. The Wizard should complete the pairing process and inform you that your device is now paired and available. You will then be returned to the Bluetooth Settings panel where your Bluetooth device will be listed in the window.

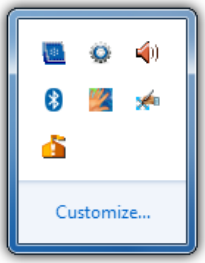
7. If there were additional Bluetooth devices discovered by the Wizard, it should pop a new window asking if you would like to pair the additional devices. If the wizard does not appear, tap on the "New Connection" button to begin pairing your remaining devices.

8. If your additional devices are not found, simply place the target Bluetooth device into pairing mode again and start the process over. As pairing mode broadcasts an active signal, it draws additional power and therefore is set to last only a short duration of time to conserve battery life.

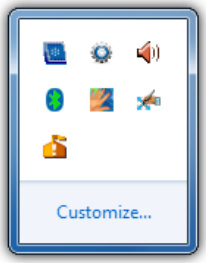
Your device(s) should now be connected to your tablet and available for use. If successful, the Bluetooth device(s) will be listed in the Bluetooth Settings window and a Bluetooth logo in the System Tray will be present with a green "B".



Red icon means Bluetooth transmitter is off.

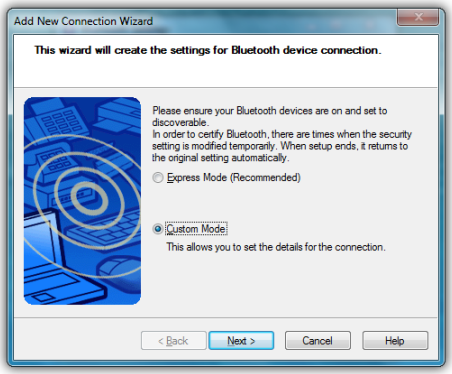


White icon means Bluetooth transmitter is on but no device(s) connected.



Green icon means Bluetooth transmitter is on and device(s) connected.

If you have trouble connecting to your Bluetooth device, make sure you completed the above steps in the time period that your device is in pairing mode. If your device exits pairing mode before you can connect, re-enable it and, depending on the state of the connection process, redo any applicable steps.

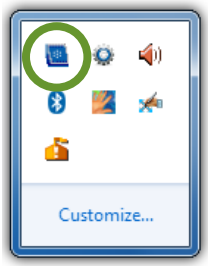


If you are certain that you completed the above steps while your Bluetooth device was in pairing mode and still can not connect successfully, you may need to manually set the proper Bluetooth connection parameters. To do this, simply restart the Connection Wizard by tapping on the "New Connection" button, and when the Bluetooth Wizard starts select the "Custom Mode" option before continuing.

Intel® Graphics and Media Control Panel

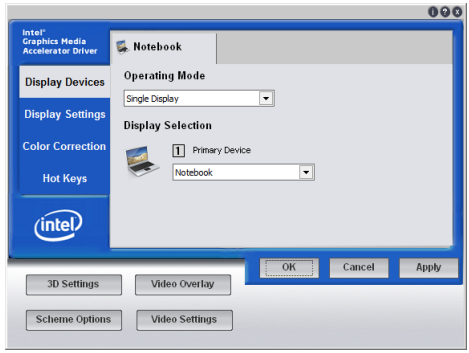
Using the Intel® Graphics and Media Control Panel, you can adjust color and brightness settings of your display, monitor resolution, color depth, rotation, video playback, enable multi-monitor support (using the optional Docking Cradle or VESA Mounting Plate) and more.

To launch the control panel, press and hold on an empty part of your desktop and then tap on "Graphics Properties..." from the pop-up menu that appears. Alternatively, you can tap on the control panel's icon in the System Tray and select "Graphics Properties..." from the pop-up menu that appears.



You can double-tap on the Intel Graphics icon to open the control

Configuring your Display Device(s)



When the Intel® GMA Driver Control Panel opens, it will display the operating mode and display selection of the Sahara NetSlate's current configuration. Unless you have the system attached to the optional Docking Cradle or VESA Mounting Plate and an external monitor is attached to the VGA port, you will only have the options of "Single Display" and the Primary Device as "Notebook" which is the internal LCD panel.

Tap on the help button (**?**) at the top of each panel to display tool tips that will explain what each setting does.

Enabling Multiple Monitor Support

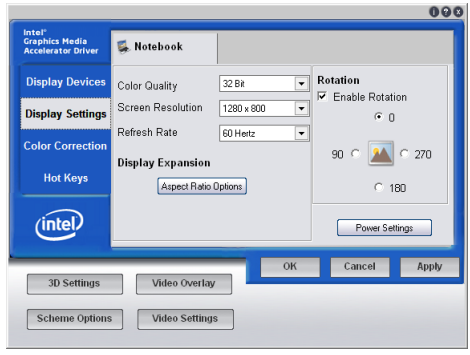
To enable multiple displays, be sure to have your external monitor connected and then select your desired operating mode from the drop down on the ***Display Devices*** Tab. “Single Display” uses only one monitor, “Clone Display” will show the same desktop view on both monitors, or “Extended Desktop” to use both monitors as one big desktop space.

After you have chosen your operating mode, select which monitor will be the Primary display and which will be the Secondary display. The Primary display will control the resolution of the Windows desktop, house the Windows Taskbar and be the only monitor active when operating in “Single Display” mode.

Changing Display Properties

The ***Display Settings*** tab is where you can set your display resolution, color depth, refresh rate, default screen rotation and scaling mode. Tapping on the "Aspect Ratio Options" button will

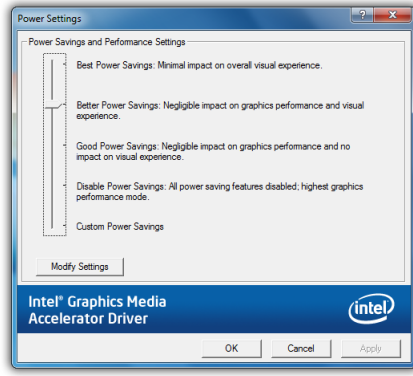
open a window that allows you to choose how your desktop will display on screen when resolution settings of an external monitor doesn't match the internal display.



"Scale Full Screen" will scale up the Windows desktop to fill the monitor screen if the resolution of the monitor is set higher than the resolution of the Primary display. "Center Image" will center the desktop, without scaling, on the screen surrounded by a black border.

Adjusting Power Settings

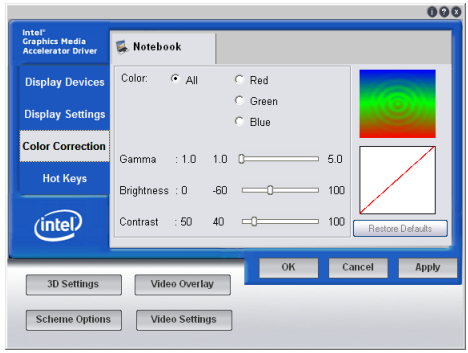
To control how the system balances battery efficiency and display performance, tap on the "Power Settings" button to open a sub-panel that will allow you to choose either one of four Power Savings modes, or to create your own custom power savings profile. The "Modify Settings" button in the ***Power Settings*** panel exposes the complete set of available power settings for use with a custom profile.



Enhancing the Display

The ***Color Correction*** tab is where you can adjust the Brightness, Contrast, and Gamma (mid-level brightness only) of the display for all color channels or each one individually.

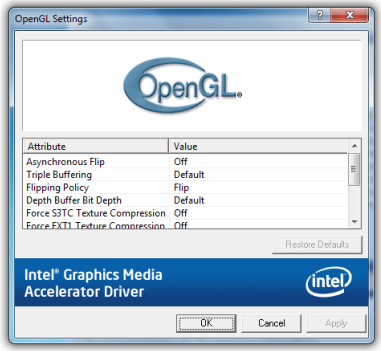
Two display boxes on the right side of the panel will allow you to monitor how your setting adjustments effect the RGB displays as well as the output contrast and gamma curves of each channel. The entire desktop display will also update live as you make your adjustments with the various sliders.



If you dislike the changes you have made and want to revert to the default display settings, simply tap the "Restore Defaults" button beneath the two display boxes on the right side of the panel.

3D Performance

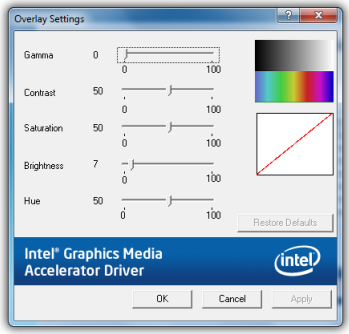
Tapping the ***3D Settings*** button at the bottom of the GMA control panel opens a panel where you can adjust the 3D settings for better performance (higher frame rates) or better display quality (less screen tearing and better image smoothing). Tap in the value field to adjust each attribute's setting. To revert to the default settings, tap on the "Restore Defaults" button located underneath the attribute list window.



Video Overlay for Windowed Video Playback

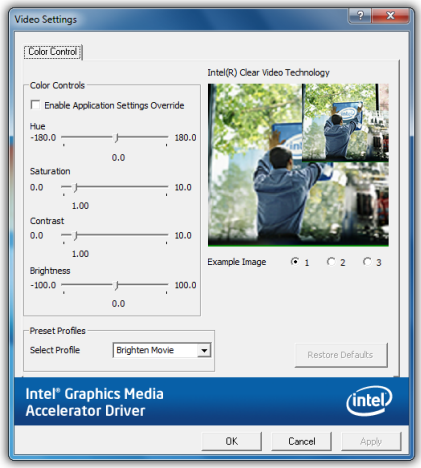
The ***Video Overlay*** window is where you can adjust how video looks when played back on your screen in a window on your desktop. These settings work independently of the Windows

desktop settings and only effect the video playback window. You can use these settings if a video you are watching looks too dark, for example.



Video Settings for Full Screen Video Playback

The ***Video Settings*** window is where you can adjust how video looks when played back on your screen full screen, independently of the Windows desktop settings. You can use these settings if a movie you are watching looks too dark, for example.



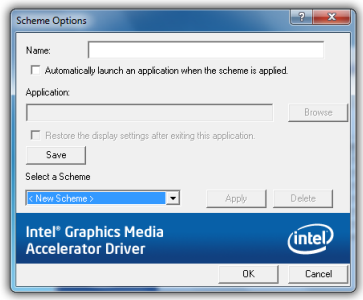
Hot Keys

The ***Hot Key*** tab will allow you to enable and disable keyboard short-cuts for opening this control panel, rotating the screen, scaling the display, and enabling/disabling the display(s). Using keyboard short-cuts are much quicker than having to open the control panel by tapping on the desktop, opening the panel,

navigating to the proper section, etc. in order to make a commonly used settings adjustment.

TIP: Map these keyboard short-cuts to a pen/touch gesture to enable changes with a simple flick of the pen or your finger.

Display Schemes



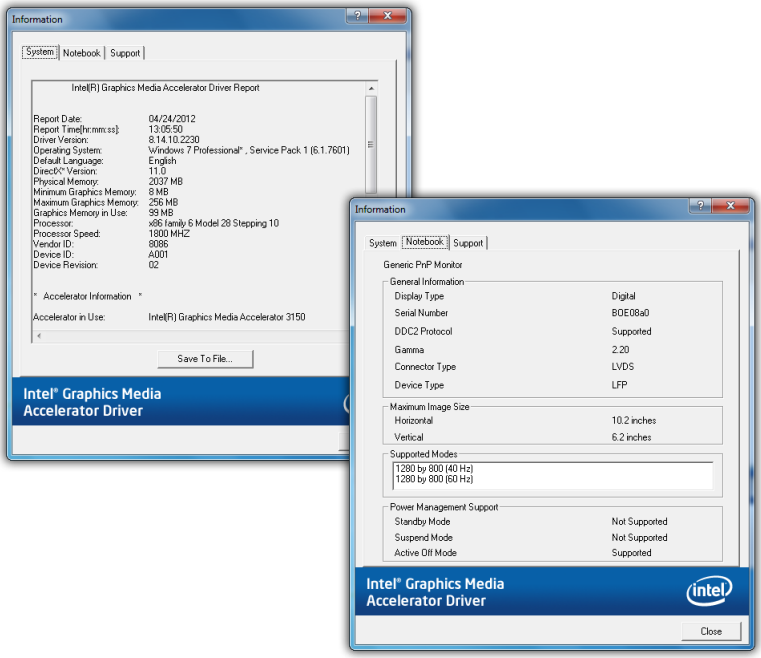
Since not all display settings are appropriate for all applications and uses, the GMA control panel includes the ability to save all of the settings you collectively make in this control panel to a custom graphics *scheme* that you can invoke whenever the need arises. Additionally, you can link a scheme to a particular application so that anytime you launch that application, the scheme will be automatically invoked.

Why might you want to create multiple schemes?

- ❖ You need better 3D performance at the expense of visual quality for a particular graphics intensive application.
- ❖ When the system is docked on running on AC power you turn off all power saving features for maximum graphics performance.
- ❖ When you are out in the field you wish to maximize power savings at the expense of 3D performance to enhance battery life.

System and Display Information

Tapping on the (**i**) icon in the upper right corner of the GMA control panel opens an ***Information*** window that displays a list of the system's graphics and display hardware information, including an overview of many important settings related to your system's CPU, memory, graphics accelerator, Windows and DirectX versions, built-in display and attached display.



Getting More Help

The ***Support*** tab in the "Information" panel provides links to the Intel website where you can obtain more information and program updates.

Realtek HD Audio Manager

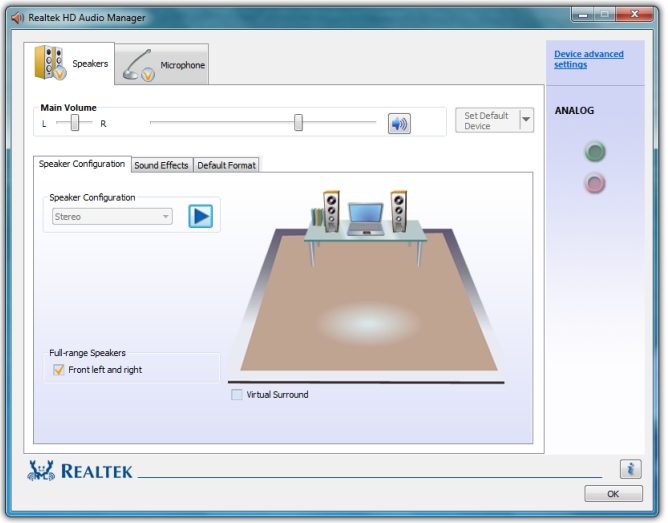
The Realtek HD Audio Manager is where you can control how audio is recorded and played back on your Sahara NetSlate. To enter this control panel go to “START → Control Panel → Hardware and Sound” and scroll down to “Realtek HD Audio Manager”.

Alternatively, you can go to the System Tray and press and hold on the Realtek

HD Audio Manager icon ( ) and tap on "Sound Manager" from the pop-up menu that appears. The advantage here is that the pop-up menu contains short-cuts to other audio related controls in Windows 7, including the Sound Control Panel (Audio Devices & System Sound Settings), the Windows Media Player, the Volume Control and the Windows Sound Recorder application.

Adjusting Audio Playback

The ***Speakers*** tab is where you can control the way your Sahara NetSlate plays back audio. Here you can adjust the system volume level, set the default playback device (internal speaker or headphones/external speakers), specify the type of speakers attached to the system, set environmental presets for sound effects, and specify the audio playback format.



Volume Level

The ***Main Volume*** section at the top of the Speakers tab has controls for stereo balance (left and right), system volume (affects overall volume levels of all playback sounds, use the volume control panel to adjust individual sound sources), and

volume muting. The volume level applies to the default audio playback device.

Set Default Playback Device

This drop down sets which audio playback device (internal speakers, headphone/external speakers, connected USB audio device) will output system audio.

Speaker Configuration

This sub-tab allows you to choose what type of speaker configuration is attached to your system. If you do not have any attached audio devices, your configuration will default to "Stereo" for the built-in speakers and be grayed out.

Press the play button next to the drop down menu to hear a speaker test play. If you do not hear anything from your speakers, check to make sure the volume level is turned up high enough or not muted.

To encode surround sound audio as stereo sound for transfer out of the analog out/headphone jack to a speaker system or receiver capable of surround sound matrix decoding, place a check in the "Virtual Surround" check box.

If you are playing back deep booming sound tracks that are causing your externally connected speakers to distort, uncheck "Full-range Speakers" to limit the output of lower frequency (deeper) sound.

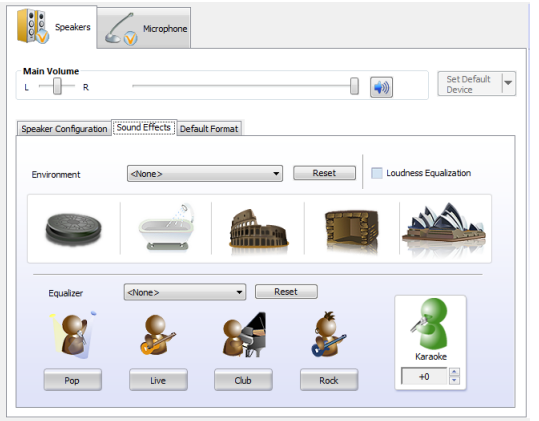
Sound Effects

This sub-tab is where you can apply sound effects to your audio playback to simulate different environments (regular room, bathroom, Auditorium, Concert Hall, etc.). Select an ***Environment*** from the drop down menu to hear how it affects playback.

To constrain certain sounds from playing back too loudly or too softly compared to the average volume level of the currently playing audio content, put a check in the box entitled ***Loudness Equalization***.

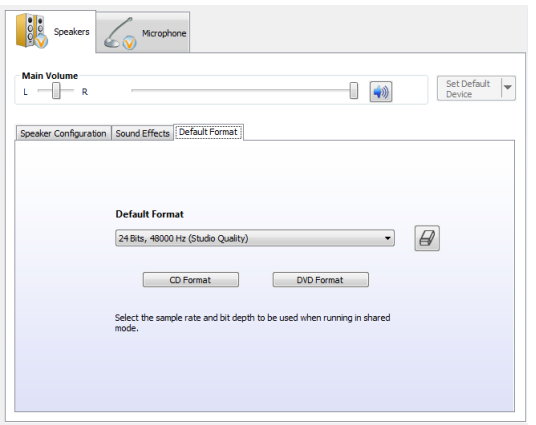
Use the ***Equalizer*** to adjust the waveform of the audio playback to better conform to certain types of musical styles.

Use the ***Karaoke*** counter control to cancel out (tone down) frequencies associated with human voice sounds (singing).



Default Audio Format

Use this drop down to set the bit depth, sampling rate and frequency of the audio playback. The higher the settings the better quality the sound. There reaches a point of loss of distinction depending upon the speakers being used to play back the



audio, so higher settings may not also produce audio output that sounds better to the listener. Going too low, however, will produce audio that sounds poor.

Adjusting Audio Recording

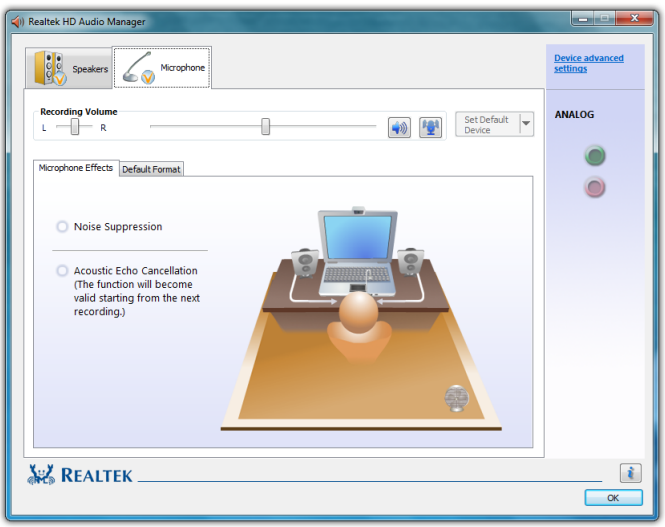
The ***Microphone Tab*** contains controls to adjust the quality of audio recorded by the system via either the built-in digital microphone array, or an externally connected sound source.

Recording Volume Level

The ***Recording Volume*** section at the top of the Microphone tab has controls for stereo balance (left and right), input volume levels of the selected recording device, muting and microphone boost.

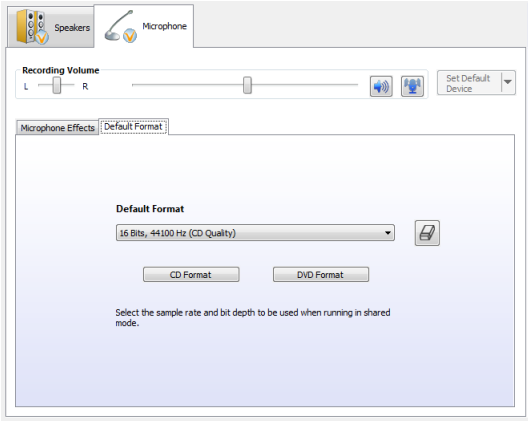
Microphone Effects

This sub-section allows you to apply ***Noise Suppression***, to cancel out background noise, and ***Acoustic Echo Cancellation***, to reduce echo caused by the audio playing out the front speakers while recording.



Default Format

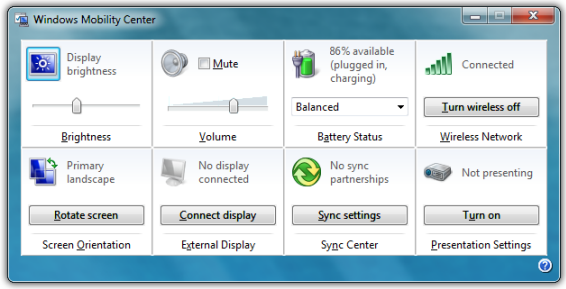
This sub-section is where you can choose the audio recording quality. Use this drop down to set the bit depth, sampling rate and frequency of the audio recorded. The two default choices are for CD quality and DVD quality.



Windows Mobility Center

Windows 7 includes the Mobility Center which groups together, into one panel many of the most common functions mobile users may need while on the go. To open the Mobility Center go to "START → All Programs → Accessories → Windows Mobility Center".

Mobility Center puts these import functions together at your fingertip: screen brightness, volume, battery status and power settings, wireless networking, screen rotation, external display connection, sync settings and presentation settings (for hooking up a projector).



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Sahara
NETSLATE®

Chapter 05

Securing Your Sahara NetSlate

Your Sahara NetSlate is equipped with a security enabled BIOS, a Trust Platform Module (TPM) that is TCG v1.2 compliant, and a biometric fingerprint reader that can help you better secure your system and your data from intruders.

Used in conjunction with the security features of Windows 7 and specialized security management software, a TPM provides facilities for generating cryptographic keys—as well as the ability to limit the use of such keys for authentication or encryption/decryption—and also random numbers. The TPM can also be used to authenticate a specific hardware device for use in platform authentication. For example, the TPM can be used to verify the authenticity of a specific hardware system for secured access.

The biometric fingerprint reader can be used on its own as a method for entering passwords without the need for a keyboard, or in tandem with the TPM to create a secure and convenient way to protect system access rights and data availability.

This chapter will help get you started securing your system by showing you how to enable the TPM, and get it set to be used in tandem with either Windows 7 data encryption facilities or your security management system of choice, register your fingerprints with the UPEK Protector Suite and begin using it to store and retrieve saved passwords.

Initializing TPM

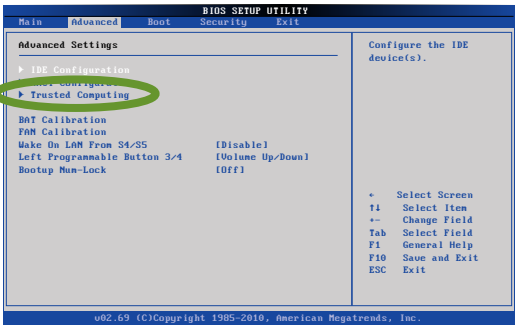
The first thing you must do in order to begin securing your computer is to initialize the TPM. This requires first turning on the TPM and then taking ownership of the TPM.

Turning on the TPM

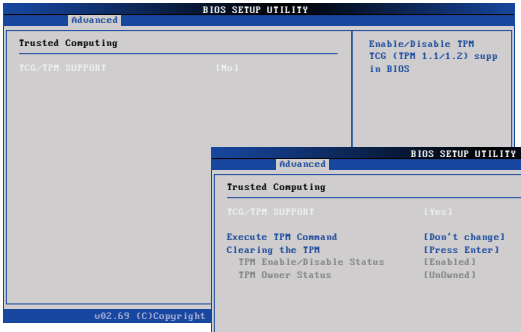
The first step is to turn on the TPM in the system's BIOS.

NOTE: The function keys on your Sahara NetSlate act as navigation keys in the BIOS. To make the instructions easier to follow, the keys will be shortened to L1-4 and R1-4 to represent the first through fourth buttons on both the left and right sides of the system, with 1 being the top most button on a given side and 4 being the bottom. So, L1 is the top button on the left side of the Tablet PC, while R4 would be the bottom button on the right side.

1. Power on or restart your Sahara NetSlate.
2. As soon as the TabletKiosk logo appears on the screen press the Screen Rotation (L2) button on the left side of the system.
3. When the BIOS appears, press L3 to go to the ***Advanced Menu*** and then go down to the ***Trusted Computing*** item by pressing L4 twice.



4. Enter the Trusted Computing screen by pressing R2.
5. With the TCG/***TPM SUPPORT*** option highlighted, press R2. Highlight "Yes" by pressing L4 and then R2. The TPM SUPPORT entry should now read "Enable".



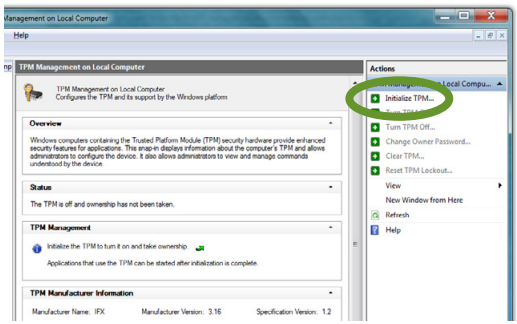
TPM is OFF

TPM is now set to be enabled, but the system must be restarted before it takes effect.

6. Press R3 to Save and Exit, and then press R2 to commit the changes and exit the BIOS.

Taking Ownership of the TPM

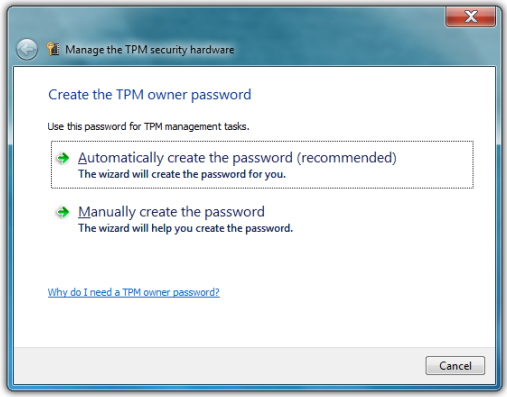
1. To take ownership of the TPM you can use the TPM Initialization Wizard in Windows 7.
2. Go to "START → All Programs → Accessories → Run"
3. In the Open field, type TPM.msc and tap the "OK" button.
4. The TPM Management Console should appear. In the ***Actions*** pane, tap on Initialize the TPM. This will start the TPM Initialization Wizard.



The TPM Management Console (TPM MC) will walk you through the process of taking ownership of the TPM. To access the TPM MC, you can also go to the START menu and type TPM.msc in the search bar and then tap on its link in the search results window.

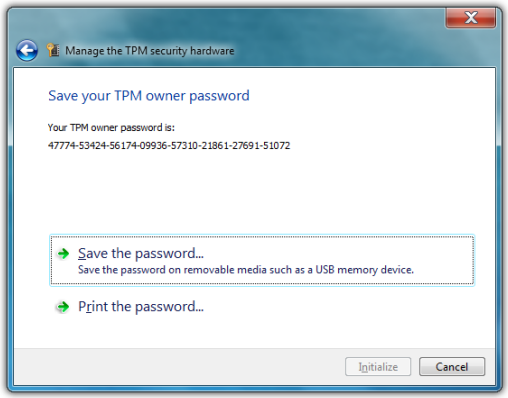
5. From the window that appears, tap the "Shutdown" button to turn off the system.

6. Power on the Sahara NetSlate. Windows will load to the desktop and a window will appear asking you to create a TPM password. Tap on ***Automatically*** to have Windows create a secure password for you.



Owning the TPM is a critical step in securing your system. To create the password we recommend letting Windows create one for you for maximum security.

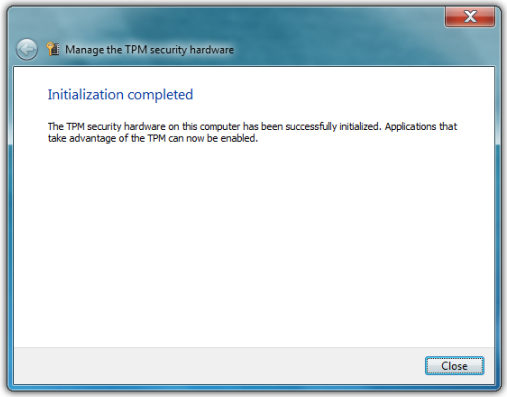
7. A new window will appear prompting you to save your TPM ownership password, which is displayed for you along with an option to ***Save the Password*** to a removable drive such as a USB memory stick, and another to ***Print*** the password. You must choose to do at least one of these options in order to continue.



Saving your password is critical to protecting your data, and so you must choose one of the above steps to continue.

VERY IMPORTANT: Regardless of which option you choose to save your TPM ownership password, it is **critical** you **do not lose this password, or any data you encrypt could be lost to you forever.** There is no way to circumvent or recover this password if you lose it.

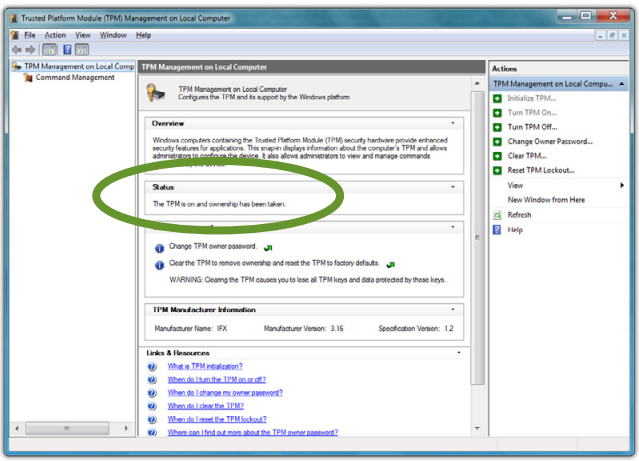
8. Once you have saved your password, tap on the "Initialize" button. You will see a message telling you that the TPM is initializing, and after a moment you should see a window stating the ***Initialization is complete*** and that applications that take advantage of the TPM can now be enabled.



When you see this window it means your TPM is initialized and ready to begin helping to protect your data.

9. Tap the "Close" button to exit the TPM Initialization Wizard.

You have now successfully initialized and taken ownership of the TPM. It is now ready to be used in conjunction with other security applications or with Windows Group Policies to block and allow certain TPM commands.



To learn more about TPM command blocking and using group policies to configure command blocking, tap on the links at the bottom of the TPM Management Console entitled ***How do I block TPM commands*** and ***How do I configure group policy related to TPM command blocking***, or ask your System Administrator.

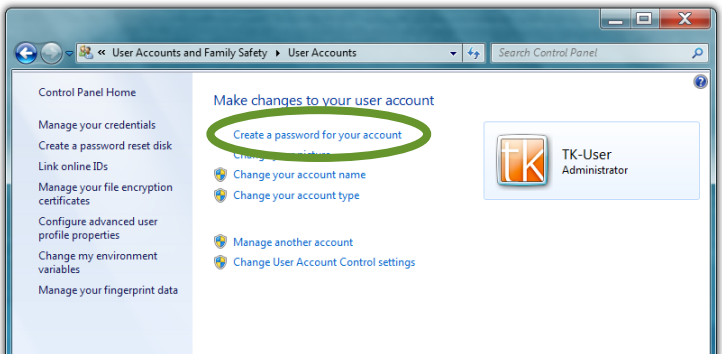
Creating a Windows Password

If you didn't choose to do so during the initial Windows set-up procedure, the next step in securing your data is to create a Windows password. If your Sahara NetSlate operates within a Windows Domain, you likely already have a password assigned to your user account and you are ready to go.

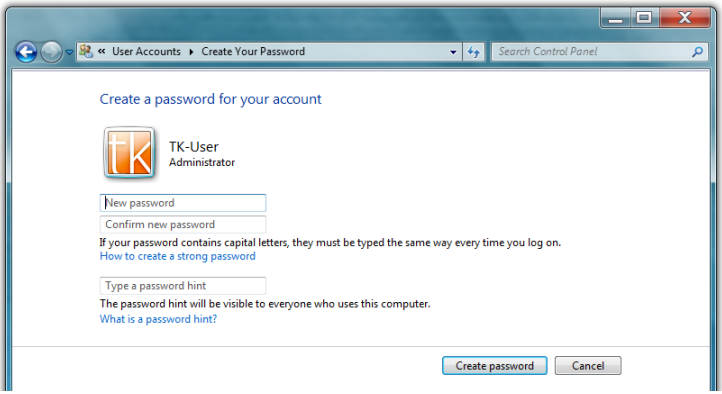
If you are unsure whether your company has a Windows Domain, contact your System Administrator or IT staff before continuing, otherwise you may unknowingly end up with two separate user accounts and find that data —or access to shared network resources—you need is split between them and unavailable at critical times.

To create your Windows password:

1. Go to "START → Control Panel → User Accounts and Family Safety → User Accounts "
2. From the User Accounts window, tap on the ***Create a password for your account*** link.



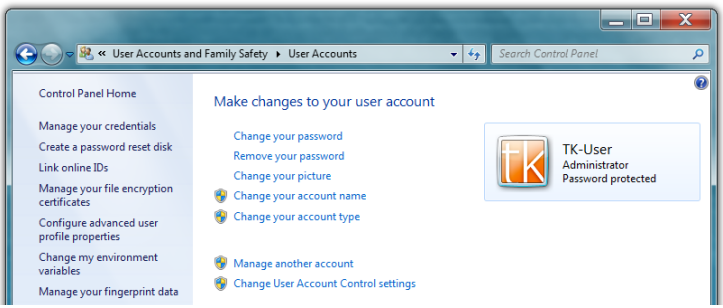
3. The Create Your Password window should open and the cursor will be in a field labeled "New Password". Enter your new password. Keep in mind that passwords are case sensitive.



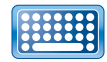
TIP: Try and create a password that mixes letters, numbers and at least one special character (! _ $, etc.) to make it more difficult for someone attempting to access your system to guess it.

4. Confirm your password by typing it again and then enter a hint to help you remember it in case you ever forget. Don't use the password itself as the hint as that will allow anyone to gain easy access to your system.

5. Tap the "Create password" button to save your password and be returned to the User Accounts window. You should now see "Password protected" listed under your user account badge.



After creating your password, if you try and log into Windows but the on-screen keyboard doesn't appear, tap on the keyboard button located in the lower left corner of the login screen.



This button toggles the visibility of the on-screen keyboard

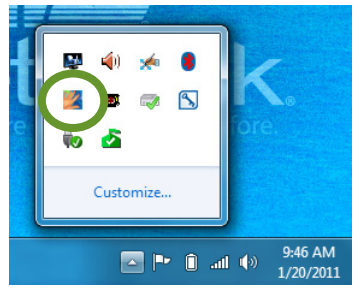
Getting Started with the UPEK Protector Suite

Now that you have initialized the TPM and created a Windows password, you can begin using your security management software to more safely manage your passwords, encrypt your data and protect your identity. Included on your Sahara NetSlate with Windows 7 is the UPEK Protector Suite.

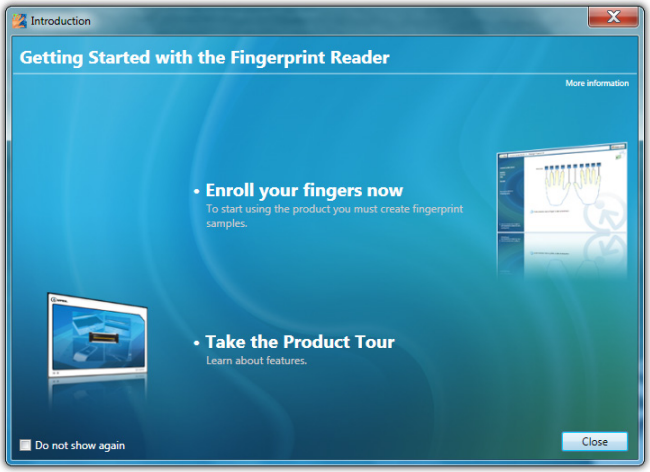
It features an application launcher, a password bank, a strong password generator, encrypted archives to protect your data, an e-Wallet for safer online purchasing, and a Biomenu for quick access to these security features simply by swiping your finger across your Sahara NetSlates biometric fingerprint reader.

Enrolling Your Fingerprints

To get started using the security features that the Protector Suite offers, you must first enroll your fingerprints.

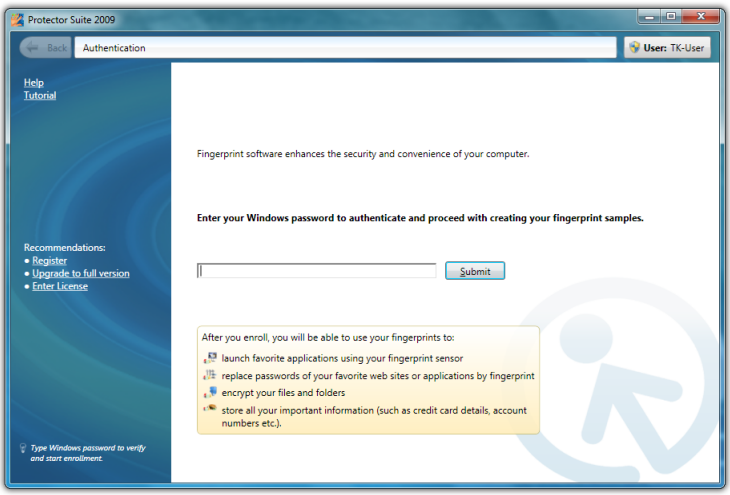


1. Launch the Protector Suite to begin the enrollment process. The easiest way to do this is by swiping one of your fingers over the finger-print reader. Alternatively, you can tap on the Protector Suite icon in the System Tray, or if you are in the User Accounts window, you can tap on the link ***Manage your fingerprint data*** in the left pane of the window.
2. The first time you launch the Protector Suite you will be presented with the Introduction window. To continue, tap on ***Enroll Your Fingers Now***.

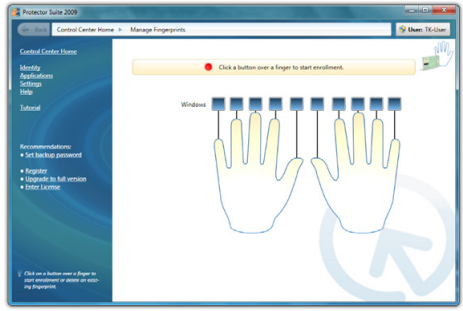


NOTE: Place a check in the box labeled "Do not show again" if you do not want to be presented with this window every time you launch the Protector Suite.

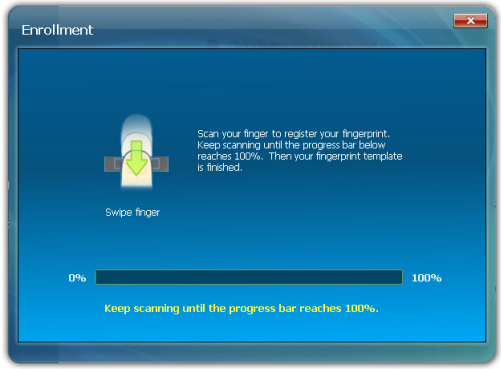
3. Enter your Windows password to authenticate yourself and then tap the "submit" button.

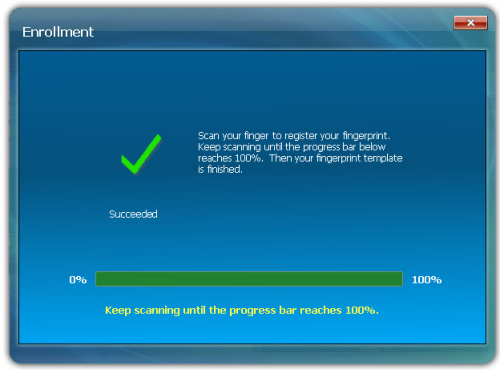


4. Tap on the box above whichever finger you wish to enroll first.

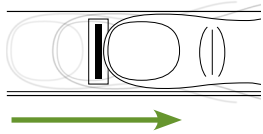


5. When the enrollment window appears, lay the finger you just selected horizontally on the front panel to one side of the fingerprint reader and slide it across the scanner bar to begin the enrollment process. The window will inform you if a scan was successfully read or if there was a problem. You will need to repeat this procedure several times until enough successful reads have been recorded for the progress bar to reach 100%.

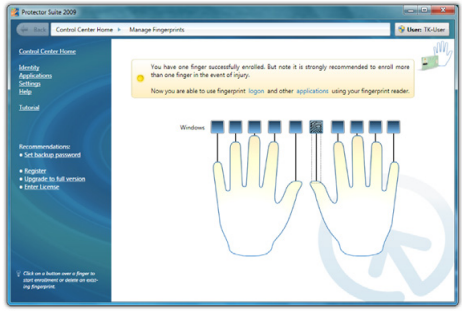




NOTE: The illustration in the enrollment window shows that you must slide your finger across the scanner in a downward direction. Because the fingerprint reader on the Sahara NetSlate is oriented vertically, you must slide you finger in a horizontal direction.



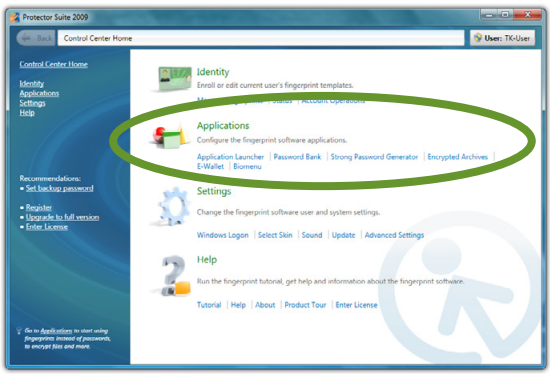
6. Once the Protector Suite has captured enough image data to enroll your fingerprint, you will be returned to the previous window and informed that you have successfully enrolled one finger. Repeat the process until all of the fingers you wish to use have been enrolled.

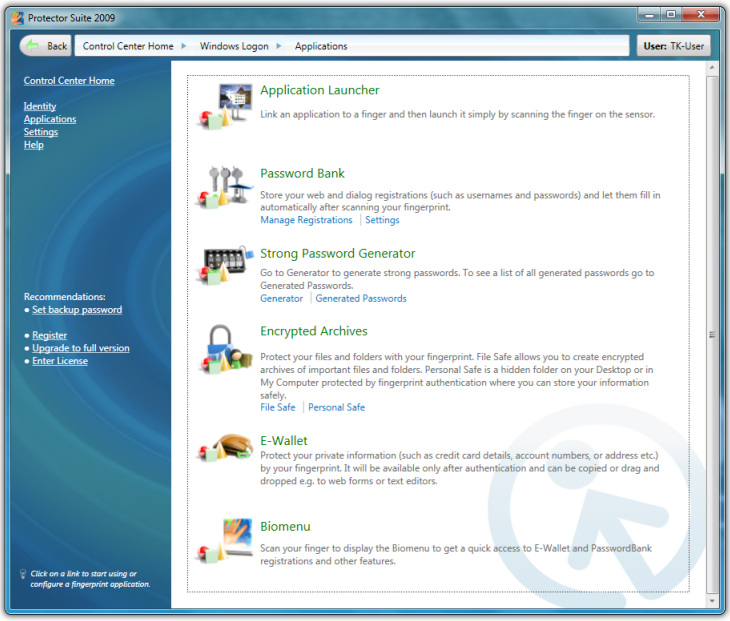


NOTE: For safety reasons, it is recommended that you enroll at least one finger from each hand to be sure you can always gain access to your system and data.

Using the Protector Suite Applications

The Control Center Home screen houses all of the different options of the suite. To begin using the security applications, tap on the ***Applications*** link.





The applications in the Protector Suite are aimed at not only protecting your data and personal information, but also at making it easier for you to accomplish tasks safely by using the biometric fingerprint reader on the front of your Sahara NetSlate a510.

Application Launcher

Associate an application with any enrolled fingerprint. Once assigned, you can launch that application simply by swiping the assigned finger across the fingerprint reader. The more fingers you enroll, the more application short-cuts you can create.

Password Bank

Store username and password combinations for use with website log ins and dialog registrations.

When you are at a website you wish to register, simply fill in the login information and before submitting the information, swipe an enrolled fingerprint to display the Biomenu and Select ***Register.*** Next time you are at the site, simply swipe your finger to input your login information.

Strong Password Generator (requires full Protector Suite)

Generates strong passwords that are difficult to break and then stores them for use with the Password Bank. This feature requires that you upgrade your Protector Suite to the full version. Tap on the ***Upgrade to full version*** link in the left hand pane of the Control Center for more information.

Encrypted Archives

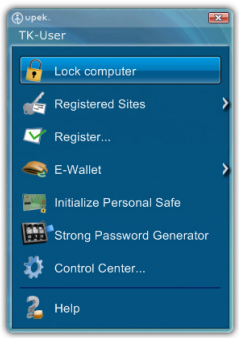
Made up of two parts, the File Safe and the Personal Safe. The ***File Safe*** creates an encrypted archive on your data drive where you can store files and folders that will be protected by fingerprint verification and the backup password. Files are encrypted in their current locations. The ***Personal Safe*** creates a hidden folder on your drive that is protected by fingerprint verification and the backup password. Files and folders stored in the personal safe are hidden from view and protected from editing until you unlock the folder.

E-Wallet (requires full Protector Suite)

Similar to the Password Bank but for private personal information (such as credit card details, account numbers, etc.) instead of just passwords. E-Wallet can help you fill out complex forms by safely storing details you use frequently when shopping online. Forms can be easily filled out by swiping an enrolled finger. This features requires that you upgrade your Protector Suite to the full version. Tap on the ***Upgrade to full version*** link in the left hand pane of the Control Center for more information.

Biomenu

Biomenu is a pop-up menu that provides quick access to features and settings of the Protection Suite. It is invoked by swiping a registered finger.



To get more help with setting up the Protector Suite and using these applications, tap on ***Help*** at the bottom of the Biomenu.

Protecting Your Files Using BitLocker Drive Encryption

BitLocker is a feature available only in ***Microsoft Windows 7 Ultimate*** edition (and Enterprise edition) that protects the files and folders on your data storage drive. You can also use ***BitLocker To Go*** to help protect all files stored on removable data drives such as external hard drives and USB flash drives.

Unlike Encrypted Archives in the Protector Suite that encrypts individual files and folders, BitLocker encrypts the entire drive. You can log on and work with your files normally, but BitLocker can help block hackers from not only reading your private data, but also from accessing the system files they rely on to discover your Windows password or from accessing your data even when they remove it from your computer and install it in one of theirs.

When you encrypt your system drive with BitLocker, it checks the computer during start-up for any conditions that could represent a security risk (for example, a change to the BIOS or any start-up files). If a potential threat is discovered, BitLocker will lock down the drive until a special recovery key is used to unlock it. So, make sure to create this key when you turn on BitLocker for the first time.

If you have initialized the TPM before using BitLocker for the first time, BitLocker will use it to seal the keys that are used to unlock the encrypted operating system drive. When you start your Sahara NetSlate, BitLocker asks the TPM for the keys to the drive and unlocks it. This provides a very strong extra layer of protection that makes it virtually impossible for unauthorized users to access your data.

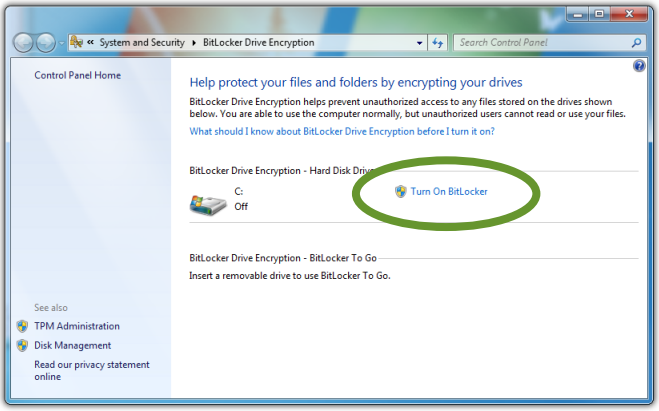
If you encrypt data drives with BitLocker, you can unlock them with a password, fingerprint swipe or a smart card. You can also set them to unlock automatically when you log on to the system.

Turning on BitLocker

To get started using BitLocker, you must first turn it on:

1. Go to START → Control Panel → System and Security → BitLocker Drive Encryption.

2. From the BitLocker Drive Encryption control panel, tap on the ***Turn on BitLocker*** link next to the drive you want to encrypt to start the BitLocker Setup Wizard.



3. Follow the instructions in the wizard, making sure to create your BitLocker recovery key. When you are finished with the wizard, make sure to store the key in a safe location and do not lose it, for if you do and there is a problem, the contents of your entire drive could be lost to you forever.

Turning off BitLocker and Decrypting Your Drive

There may be a point in time where you no longer want to use the BitLocker Encryption, or perhaps you want to move your drive to another computer that does not have BitLocker installed on it. Before you can gain access to your drive's contents, you'll need to decrypt it.

1. Go to START → Control Panel → System and Security → BitLocker Drive Encryption.
2. To suspend BitLocker temporarily, tap on ***Suspend Protection*** and then tap on "Yes".

   To turn off BitLocker and decrypt the drive, tap on ***Turn Off BitLocker*** and then tap on "Decrypt Drive".

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Chapter 06

Upgrading Your Sahara NetSlate

Out of the box, your new Sahara NetSlate is a versatile, mobile computer capable of accomplishing a wide variety of tasks with speed and precision. Depending on your system's configuration, there are still ways to make your Tablet PC do more and do it faster. Especially with larger, faster and less expensive hard drives (and solid state drives) seemingly always just around the corner.

This chapter covers the procedures for inserting a SIM card for use with the optional 3G networking module, upgrading your computer's memory (RAM) and storage capacity (hard disk drive or solid state drive), as well as using the TabletKiosk Modular Expansion System.

Before you Begin ANY Upgrade Procedure

Before attempting to add or remove any internal components within the Sahara NetSlate—with the exception of an expansion module as they are hot swappable—it is important that you always observe the following conditions/procedures:

1. Power off your computer, remove the power cable from the computer and remove both batteries. Refer to the section entitled ***To Remove the Battery Packs*** in the ***Getting Started*** chapter to see how to remove a battery.
2. Disconnect any networking cables, USB cables and cables connected to other powered devices.

3. When disconnecting a cable from the computer, always pull on its connector, not on the cable itself. When reconnecting a cable, make sure that both the connector and any corresponding pins are aligned properly with the cable before attempting to secure it in place.
4. Handle all components with care. Do not touch the components or contacts on the connectors or the underside of the drives. Always hold such components by the edges or sides.
5. All electronic components inside a computer are sensitive to electrostatic discharge. Therefore it is important to properly ground yourself before attempting any of the following procedures; either by using a wrist grounding strap or by periodically touching an exposed, unpainted metal surface.
6. You should only attempt upgrades and/or component replacements on a solid, clean, flat surface.

CAUTION: Damage resulting from the servicing of your computer that is not authorized by TabletKiosk is not covered by your computer's standard or optional extended warranty.

Installing a SIM Card for use with the Optional 3G Module

In order to use the optional 3G capabilities of the Sahara NetSlate a510 on a GSM cellular network (most 3G cellular networks outside of the US and AT&T Wireless and T-Mobile within the US are GSM based) you will need to acquire a SIM card from your wireless carrier and install it in the Sahara NetSlate's SIM card holder located inside the RAM/3G compartment of system.

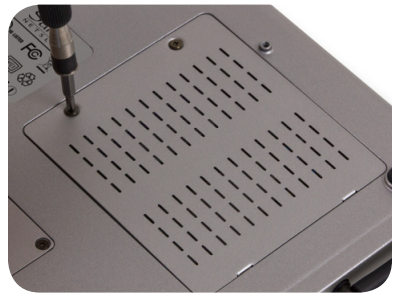
Your wireless provider should have supplied you with either an access code (CDMA/EV-DO cellular networks, such as Verizon Wireless and Sprint use embedded access codes) or a SIM card and the software necessary to access their 3G network. Please refer to their instructions for the proper procedures for installing their software and configuring your WWAN access account.

If your carrier does not provide you with connection software, you may also use the "AirCard Watcher" application either pre-

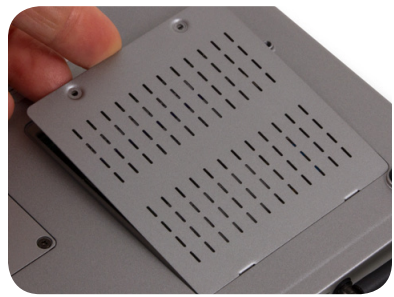
installed on your system, or by launching the setup application located in "***C:\Drivers\3G***" on your Sahara NetSlate's data drive.

To insert the SIM card into your Sahara NetSlate a510:

1. Power off the system and place it face down on a flat surface that will not damage the screen so that you can access the back of the system.
2. Locate the RAM/3G Compartment on the back, near the top right side of the system (see the chapter ***Touring the Sahara NetSlate*** for the location). Remove the two screws that secure the access cover (use a #1 Philips screw driver).



3. Lift the cover from the edge where the screw holes are located to remove it and set it aside. The system's RAM slot and WWAN data module are inside. The SIM card holder is located toward the top right of the compartment, just above the WWAN module.



The SIM Carrier sits just above the 3G module and to the right of the installed RAM SODIMM module.

4. Unlock the cover by placing your fingernail or another small flat object into the wide oval shaped opening near the top of the SIM holder and slide it toward the left side of the compartment until you feel it "click". Carefully, lift the cover open toward you. It should swivel like a door.

5. Slip the SIM card face up onto the slot so the clipped corner of the card matches the clipped corner of the slot and then close it and slide it back to the right until you feel it "click" to lock it into place.

NOTE: You will have to lift up slightly on the cover before you will be able to close it. You should not feel any resistance when closing the cover.

6. You can now replace the compartment cover and secure it with the screws.

Upgrading Memory (RAM)

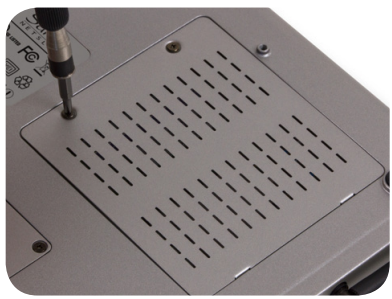
You can increase your system's memory by replacing the RAM (Random Access Memory) module on the computer's system board. Typically, the more RAM your computer has, the better it will perform, especially when running multiple tasks or applications simultaneously.

Your Sahara NetSlate can accommodate one (1) DDR3, 204-pin SODIMM module for a total of up to 4.0 GB RAM. The module is located in the RAM compartment that is accessible on the back panel of the Tablet PC.

NOTE: You can install a maximum of 4.0GB of RAM using one (1) 4.0GB SODIMM module. The Sahara NetSlate can utilize up to DDR3-800 (although faster DDR3 modules will work, just not at full speed). Check with the dealer where you bought your Tablet PC if you are unsure what type of RAM is in your system.

Refer to the following instructions and illustrations for information on how to upgrade your computer's memory modules. Be sure to follow the procedures in the previous section, ***Before you Begin ANY Upgrade Procedure***.

1. Turn off your Tablet PC, turn it over and place it face down on a solid, flat surface. Be careful not to place it on something rough that could damage the LCD display.
2. Locate the RAM/3G compartment in the upper right quadrant of the back panel of the system (refer to the ***Touring the Sahara NetSlate*** chapter to identify this compartment). Remove the two (2) screws that secure the vented compartment cover (use a #1 Philips head screw driver).



3. Lift the cover from the edge where the screw holes are located to remove it and set it aside. Inside on the left is the pre-installed RAM SODIMM.

NOTE: The RAM slot should already be populated with either a 2.0GB or 4.0GB DDR3 module. If a 4.0GB module is already installed in the slot, no further upgrade is possible as 4.0GB is the most that the Sahara NetSlate a510 can utilize.

4. Using your fingers or a small screwdriver, pull the two metal restraining clips on both sides of the RAM module outward and away from the module. The top edge of the RAM module should pop up slightly when freed from the restraining clips.

5. Gently pull out the RAM module. Try not to touch the module's connector pins to keep them clean in case you'd like to use this module again.

6. To insert a new RAM module, align the connector pins on the bottom of the RAM module with the RAM slot and slide the module into the slot at the same angle as when you removed it. Make sure the slot on the bottom of the module lines up with the tab on the RAM slot.

7. Once properly inserted in the slot, press the RAM module down flat until it clicks into place. Make sure that you have seated the module completely into

Be sure to pay attention to the orientation of the module when removing it so that you properly align the slot on the bottom of the new RAM SODIMM with the tab on the RAM slot.

the slot before pressing it down. Do not force it, if the module will not press downward you probably do not have it completely seated in the slot. Many memory errors or boot up failures after a memory upgrade are due to an improperly seated RAM module.

8. Replace the cover on this compartment and then replace and tighten the screws.

Upgrading the Data Storage Drive (HDD or SSD)

The Sahara NetSlate's data drive is the storage facility that holds all the files on your computer. If you find you are running out of space, you might consider upgrading to a larger drive.

Typically, when a computer's Hard Disk Drive (HDD) fills up, its access time begins to increase and your system seems to slow down. When this occurs, upgrading to a larger drive often will equate to better performance.

While generally more expensive, Solid State Drives (SSD) use non-volatile NAND Flash RAM to store data and are much faster than even the speediest HDD. Additionally, SSDs do not contain any moving parts and therefore are more durable and consume less battery power. If you need to increase your system's performance, upgrading to an SSD is a worthwhile investment.

Your Sahara NetSlate comes pre-configured with a data storage drive that is easy to upgrade. Before installing a new HDD or SSD, however, be sure to back up all of the files on your existing drive.

Refer to the following instructions and illustrations for information on how to upgrade your computer's data storage drive. Be sure to follow the procedures in the previous section entitled ***Before you Begin ANY Upgrade Procedure***.

1. Turn off your computer, turn it over and place it face down on a solid, flat surface. Be careful not to place it on something rough that could damage the LCD display.
2. Locate the HDD/SSD compartment near the center of the Tablet PC just below the docking connector (refer to the section ***Back View*** in the ***Touring Your Sahara NetSlate*** chapter to identify this compartment). Remove the four (4) screws that secure the compartment cover (use a #1 Philips head screw driver).
3. With the cover removed, look inside the compartment and you will see the system's data drive sitting in the bay. The drive is held securely in place by four (4) Philips head screws. You'll need to remove them in order to replace the drive.

Remove the four Philips head screws marked above that hold the drive in place.

4. Take hold of the plastic drive release strip and gently pull the drive out of its compartment as shown in the illustrations. You might have to gently move the drive slightly side-to-side at first to work it out of the SATA and power ports.

5. Unscrew the existing drive from its cage and replace it with the new drive. Once you have secured the new drive into the cage with the screws, place it back into the HDD/SSD compartment. Be careful when aligning the drive so the connectors match up with the SATA and power ports. If you are properly aligned with the compartment, it should slide back in very smoothly.

6. Slide the drive carefully back into place.

7. Replace the four (4)screws that secure the drive.

8. After the drive is securely inserted, you can replace the cover and secure it with the four (4) Philips head screws.

You are now ready to restore your system back up or install a new version of your operating system. For more information on restoring your operating system, refer to the section ***Restoring Your Sahara NetSlate*** from the ***Troubleshooting*** chapter.

Using the TabletKiosk Modular Expansion System

Your Sahara NetSlate features a modular expansion system that allows you to add task purposed functionality to your Tablet PC simply by adding specific modules. Examples of these modules include:

- **USB 2X2** adds two additional USB 2.0 ports.
- **WWAN** module adds 3G data capability, and soon 4G data capability.
- **MSR** module features a Magtek Magnetic Stripe Reader for credit card and ID card data capture.
- **P.O.S.** is a combo module that adds 2D/1D barcode scanning, a Magtek Magnetic Stripe Reader for credit card and ID card data capture capability, and (optionally) a 3G module for sending all the data back remotely.

Based upon Universal Serial Bus (USB) technology, TabletKiosk expansion system modules are hot swappable. This means you can add or remove modules without having to shut down or restart the system.

As with other standard USB peripherals, if your module came with a device driver disc, or the module's instructions tell you to download a device driver, do so and then install the device driver BEFORE you plug in the module for the first time.

To attach an expansion module:

1. Turn the Sahara NetSlate a510 around so you are looking at the back of the system. Locate the expansion port's cover located on the top left above the battery one (1) bay.
2. Remove the two (2) screws holding the cover in place (use a #1 Philips head screw driver).

3. Remove the cover to expose the expansion module port.
4. Align the connector on the module you wish to install with the expansion port on the Tablet PC. Press down gently to attach the module.
5. Use the two screws that came with the module to secure it to the Tablet PC.

To swap or remove a module, simply remove the two (2) screws holding the module in place, remove the module and then either attach a different module (as per the above procedure) or replace the expansion port's cover for protection. Be care not to lose the two screws that secure the expansion port cover.

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Chapter 07
Troubleshooting

This chapter describes how to locate information and solve some of the problems you may encounter while using your Sahara NetSlate a510. If after reading this section, you are still unable to solve a problem, please check out more online resources at www.tabletkiosk.com/support or contact the TabletKiosk Authorized Dealer where you purchased your Sahara NetSlate a510 Tablet PC.

See the section later in this chapter entitled ***Contacting Your Dealer*** for a list of the information you will need to supply in order to receive the proper support.

Some common hardware problems, possible causes and suggested solutions are presented in the following tables.

Audio Problems/Solutions

Problem	Possible Cause	Solution
There is no sound.	The volume is either muted or turned down.	Use the Windows Volume control icon in the System Tray (lower right corner of the Task Bar near the clock) to adjust the volume and disable muting.
No sound is audible through externally attached speakers or headphones connected to the Audio Out port on the left side of the Sahara NetSlate.	The speakers or the headphones are either connected to the wrong jack or are not securely plugged in.	Make sure to check that the speakers' or headphone's audio plug is securely connected to the ***Audio Out*** (🎧) port on the left side of the Sahara NetSlate.
	Speakers are not powered on.	Make sure the speakers are plugged in and turned on.

Battery Problems/Solutions

Problem	Possible Cause	Solution
Beeping sound.	The tablet's battery is low and Hibernation mode is disabled.	Connect the computer to an external power source immediately.
The battery packs are warm after charging.	This is a normal condition.	No action is required.
The battery LED indicators do not light up whether the batteries are charging or not.	No power is connected to the computer.	Check the power source and make sure the AC adapter is securely plugged into both the Sahara NetSlate and the power outlet.
	The battery is above 10% charged.	Check the battery indicator icon in the System Tray ( ) of the Windows' Taskbar. When not attached to a power source, the LED indicator will only light up if battery power is very low.
	The battery pack is nearing the end of its life.	Replace the battery pack. Use only batteries recommended for use with the Sahara NetSlate a510.
Battery life icon in System Tray ( ) is not accurately displaying the remaining charge.	Battery Packs require calibration.	Calibrate the battery pack as specified in the chapter entitled ***Battery Care and Usage***.
	The battery packs are nearing the end of their lives.	Replace the battery packs. Use only batteries recommended for use with the Sahara NetSlate a510.
Battery packs will not charge when attached to power source.	Power source voltage exceeds battery specifications.	The smart battery pack in your Sahara NetSlate will shutdown and refuse to charge if power amperage or voltage exceeds its rated specifications. Check to make sure the power source is within range of the power specifications listed on the AC adapter that came with your Sahara NetSlate a510.
	Battery packs have overheated.	Shutdown the Sahara NetSlate and allow the batteries to cool down before restarting.
	AC adapter is not compatible with Sahara NetSlate.	Check to make sure that the AC adapter used to charge the batteries is the unit that came with your Sahara NetSlate. If the AC adapter cable will not easily fit into the DC charging jack on your tablet, you probably have the wrong AC adapter.

Internet Problems/Solutions

Problem	Possible Cause	Solution
Unable to connect to the Internet.	Account for Internet Service Provider (ISP) is not properly configured.	Contact your ISP for assistance.
	No valid network connection detected.	Check the network status icon in the System Tray ( ) to make sure you are connected to a valid network. If not, rerun the Network Set-Up Wizard or contact your Network Administrator.
	Wireless transmitter is turned off.	Check the wireless power toggle on the top of the Tablet PC ( )to make sure it is switched on.
	Wireless security settings are not correct.	Make sure that the wireless security settings of your tablet match the settings of the wireless access point you are trying to connect to, and that the network access Password (WPA), PIN (Protected Set-up), or Key (WEP) is correct.
	SIM card not inserted (with optional TK 3G WWAN Expansion module)	Make sure that the SIM card provided by your wireless ISP is correctly installed in the 3G WWAN expansion module's SIM port.
	SIM card not inserted (3G mode only)	Make sure that the SIM card provided by your wireless ISP is correctly installed in the tablet's SIM port located in the Wireless Compartment (see the section ***Back View*** in the chapter ***Touring the Sahara NetSlate*** for its location).
	Wireless networking mode not correct. (only when optional 3G Data Module is installed)	Check the wireless power toggle on the top of the Tablet to make sure it is in the proper mode (blue = WiFi only, orange=3G only, purple=both active). Use the wireless mode button to place the tablet into the proper mode (see see the section ***Front View*** in the chapter ***Touring the Sahara NetSlate*** for its location).

Networking Problems/Solutions

Problem	Possible Cause	Solution
Cannot see the network.	Wireless transmitter is turned off.	Check the wireless power toggle on the top of the Tablet to make sure it is switched on if you are connecting to the network wirelessly.
Cannot connect to network.	LAN Ethernet cable is not plugged in properly or is bad	Check that the Ethernet cable is properly plugged into the LAN port. If so and you still cannot connect, try replacing the Ethernet cable with a new one.
	Wireless security settings are incorrect.	Make sure that the wireless security settings of your tablet match the settings of the wireless access point you are trying to connect to, and that the access Password (WPA), PIN (Protected Set-up), or Key (WEP) is correct.
The computer seems to connect, but doesn't see any other computers.	Correct workgroup or domain name is not set in computer's system properties.	Enter workgroup or domain name in "Computer Name" tab of the System Properties panel. Contact your network administrator if you don't know the proper name to use.

Power Problems/Solutions

Problem	Possible Cause	Solution
The computer is connected to an external power source but does not turn on even though the battery packs are connected.	The battery packs may be defective.	Replace the battery packs. Use only batteries recommended for use with the Sahara NetSlate a510.
The Power/Standby light is off and the system turns off when it is left unattended.	The system has gone into Hibernation mode.	Slide the Power toggle switch to the right and hold for three (3) seconds to resume.
The system will not turn on after it turns off when left unattended.	The system has gone into Hibernation mode because it is in a critical low-battery condition.	Connect the Tablet PC to an external power source.

Input and Screen Display Problems/Solutions

Problem	Possible Cause	Solution
The screen is blank.	The system has gone into Standby or Hibernation mode.	Slide the Power toggle switch to the right and hold for a second or two to resume.
The mouse pointer will not follow the stylus pen properly.	The touch screen requires calibrating.	Run the standard calibration routine.. (see the sections ***Calibrating the Touch Screen*** in the chapter ***Using Your Sahara NetSlate with Windows 7***)
	The digitizer requires calibrating	Run the standard calibration routine in the Tablet PC Settings control panel and choose to calibrate for "Pen Input".
The mouse pointer will not follow the stylus pen properly near the edges of the screen (Resistive touch screen).	The touch screen requires edge compensation adjustments (must run Advanced Calibration).	Make adjustments to "Edge Compensation" settings in the PenMount Control Panel. (see the section ***Edge Compensation*** in the Chapter ***Using Your Sahara NetSlate with Windows 7***)
The mouse pointer will not follow the stylus pen properly even after being calibrated (Resistive touch screen).	Touch screen linearity is inaccurate.	Run the Advanced Calibration routine in the PenMount Control Panel. Start with 9pt option.
	Touch screen controller drivers are corrupted.	This can happen over time. Check the TabletKiosk website to make sure you have the newest available drivers, then uninstall the current drivers and install the new drivers.
The screen responds well to the stylus, but not to the touch of a finger (Resistive touch screen).	Not enough localized pressure being applied.	Press or tap on the screen using the tip of your finger near/with your fingernail.
Touch Screen does not respond to touch	Touch screen is turned off	Press the R1 function button.
		Make sure that "Use your finger as an input device" is checked in the Touch tab of the Pen and Touch control panel.
The screen does not rotate when the screen rotation button is pressed.	The video display driver is not set for rotation support.	Use the Intel Graphics and Media control panel to enable the screen rotation option in the "Display" section.
	The video display drivers are corrupted.	This can happen over time. Check the TabletKiosk website to make sure you have the newest available drivers, then uninstall the current drivers and install the new drivers.

Upgrade Problems/Solutions

Problem	Possible Cause	Solution
After upgrading the computer's RAM, the system does not boot up properly	A RAM module is not seated properly.	Following the instructions in the section entitled ***Upgrading Your Memory***, try removing and reseating the RAM module.
	A RAM module is the wrong specification.	If reseating the module from the above step does not solve the problem, the RAM module could be the wrong type. Contact your dealer for assistance.
	A RAM module is defective.	If reseating the module from the above step does not solve the problem, the RAM module could be defective. Contact your dealer for assistance.
After upgrading the computer's RAM the system begins to crash, seemingly at random intervals.	A RAM module is not seated properly.	Following the instructions in the section entitled ***Upgrading Your Memory***, try removing and reseating the RAM module.
	A RAM module is the wrong specification.	The RAM module could be the wrong type. Contact your dealer for assistance.
	A RAM module is defective.	The RAM module could be defective. Contact your dealer for assistance.
After replacing the HDD the system cannot boot into your Operating System.	The drive is not formatted.	Restart the system with an external CD/DVD drive attached and insert the System Installation or Restore Disc that came with your computer into the drive.
	The drive is not connected properly.	Following the instructions in the section entitled Upgrading the Hard Disk Drive (HDD), try reseating the HDD in the bay.
After replacing a HDD with a SSD the system will not recognize the drive.	The SATA mode is not set to AHCI.	Go into the BIOS and change the SATA mode in the advanced menu from IDE to AHCI. See ***Appendix A: BIOS Setup***.

USB Problems/Solutions

Problem	Possible Cause	Solution
An external device does not work when it is connected to one of the USB ports.	The external device is not receiving power.	Make sure that the external device is plugged into an electrical outlet.
	The external device is defective.	Try connecting the external device to another computer to determine if it operates properly.
	Windows is not recognizing the device properly.	Disconnect the device, power it off, reconnect the device and then turn it on.
		Disconnect the device, power it off, power it back on and then plug it back into the computer.
		Try the above two solutions, but plug the device back in to the other USB port.
		Disconnect the device and power it off. Shut off the Sahara NetSlate normally. Power on the device and plug it in. Power on the Sahara NetSlate.

Contacting Your Dealer

If you still have a problem, the next step is to contact the dealer where you purchased your Sahara NetSlate a510.

Your dealer can determine if the problem will require that the computer be taken to a service center for repair. Before you call your dealer, please have the following information available:

1. Which configuration of the Sahara NetSlate a510 do you have?

2. What is the serial number?

3. How is your computer set-up? What peripheral devices are you using?

4. What error messages, if any, appear on the screen?

5. What software were you running at the time of the problem?

6. What have you done already to try to solve the problem? If you have overlooked a troubleshootiong step, your dealer may be able to solve the problem over the phone.

Recovering Your System

While Windows® 7 is a very stable and robust operating system, there may be times where you'll encounter errors that may prevent you from booting into Windows normally. Your Sahara NetSlate has a hidden partition on the data storage drive that contains the files you'll need to restore your system.

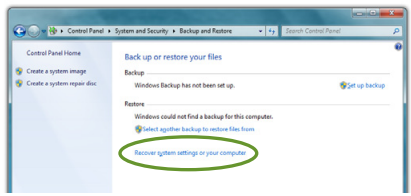
This recovery system uses Windows Recovery and enables you to restore the operating system to a previous state in time, reinstall the operating system without losing your previous settings or documents, or reinstall your system without saving your documents or settings.

IMPORTANT: You will need to have a mouse and/or keyboard with standard F1-F12 function keys attached to your system in order to launch and navigate both the Advanced Boot Options menu and the Windows Recovery System.

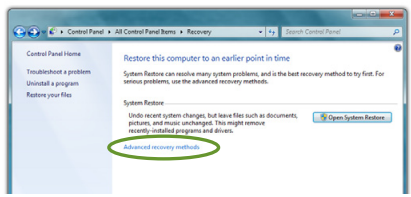
Launching System Restore from Within Windows

If you can boot into Windows, you can initiate the Windows Installation procedure by going to "START → All Programs → Maintenance → Backup and Restore" to open the Backup and Restore control panel.

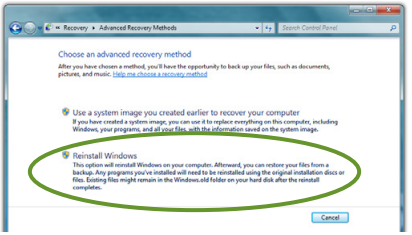
1. Tap on the "Recover system settings or your computer" link to open the Recovery panel.

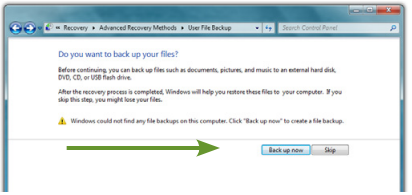


2. Tap on the "Advanced recovery methods" link to open the Advanced Recovery Methods panel.

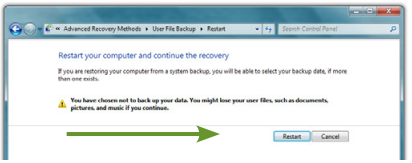


3. Select “Reinstall Windows”. You will be given the opportunity to back up your files before you proceed. If you have an external hard drive, USB drive or DVD burner, we strongly recommend backing up if you can not afford to lose your data. Tap on “Back up now” to back up your files, or choose “Skip” if you do not want to back up your files.

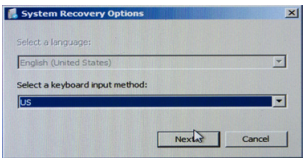




4. Tap on the “Restart” button to restart your computer and enter the Windows Recovery System.



5. When the recovery system starts, choose the keyboard language. You will then be given another chance to cancel by clicking the “No” button when asked are you sure you want to install Windows. If you are sure, click the “Yes” button and the Windows install procedure will begin.



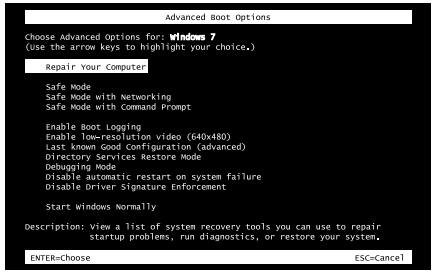
NOTE: When you launch Windows Reinstall from within the Recovery Control Panel you will only be able to reinstall Windows when your system restarts. No other recovery options will be available.

Launching System Restore at System Start up

If you are unable to start Windows, or want to choose additional recovery options, you can enter into Windows Recovery through the Advanced Boot Options menu by hitting the [F8] key on your keyboard when your Sahara NetSlate first starts up.

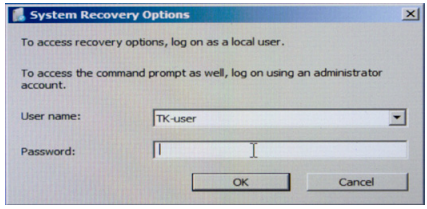
NOTE: The easiest way to enter the Advanced Boot Menu is by repeatedly pressing the [F8] key as soon as you see the TabletKiosk logo screen and not stopping until the Advanced Boot Options menu screen appears.

1. When the Advanced Boot Options menu appears, select "Repair Your Computer" and press [Enter] to launch Windows Recovery.



2. When the recovery system starts, choose your preferred keyboard language.

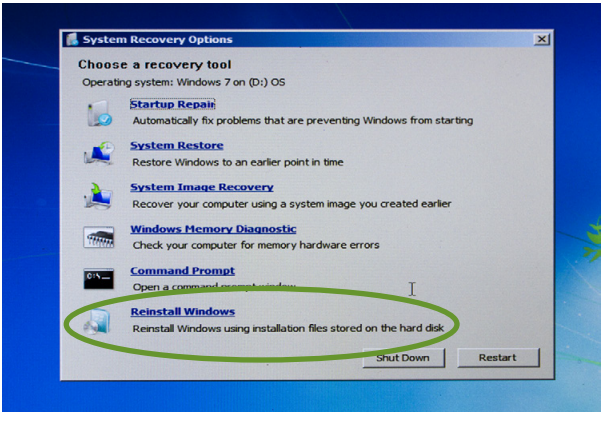
3. In order to access the recovery options, you will need to login using your current Windows login.



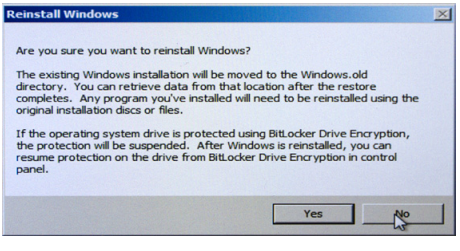
NOTE: Your current account must have administrator privileges in order to successfully login.

4. After successfully logging in, you will be taken to the System Recovery Options menu where you can choose to:
   - ❖ Repair your Windows installation.
   - ❖ Restore Windows to a earlier point in time.
   - ❖ Recover your system using a system image you previously created in the Windows backup program.
   - ❖ Run a memory diagnostic program to check your computer for memory hardware errors.
   - ❖ Open a command prompt window.
   - ❖ Reinstall Windows using the files in the hidden recovery partition.

Click on the last option “Reinstall Windows” to restore your system.



5. You will then be given one last chance to cancel by clicking the “No” button when asked if are you sure you want to reinstall Windows. If you are sure, click the “Yes” button and the restore procedure will begin.



What To Do After a Successful System Reinstall

After you have finished restoring Windows, your system will reboot and Set-up will configure Windows for first use. When you have returned to the Windows desktop, you should go to Windows Update and install any Critical updates until your system is current. Finally, reinstall your applications and any documents you backed up before you reinstalled.

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Appendix **A**

BIOS Set-up

The BIOS (Basic Input Output System) set-up uses a menu interface that allows users to configure their system. The top level menu options of the BIOS are:

- MAIN
  Provides system overview and allow user to set the language, date and time of the BIOS.
- ADVANCED
  Allows user to set-up features such as battery and fan calibration, enable and initiate the TPM, set the SATA mode, enable power features, and set button functionality.
- BOOT
  Enables user to set the device order the system will attempt to start up from.
- SECURITY
  Allows user to set Adminstrator and User level passwords for accessing the system and the BIOS.
- SAVE & EXIT
  Provides user with ability to save changes, discard changes and exit the BIOS.

Entering the BIOS

To enter the BIOS, press the Screen Rotation button on the left side of the Tablet PC or press the [Delete] key on an attached keyboard as soon as the TabletKiosk logo appears on screen.

BIOS Key Mapping Legend

Specific function keys on the Sahara NetSlate a510 have alternate functionality when in DOS mode that can be used to navigate the BIOS without a keyboard attached to the system. An exception is when entering the ***Administrator*** and ***User*** passwords as you will still need a keyboard.

Left Side Button Alternate Function Mapping

L1: Ctrl + Alt + Delete

L2: Delete (to enter BIOS at POST)

L3: → (To navigate between menus)

L4: ↓ (To navigate between items on a menu screen)

Right Side Button Alternate Function Mapping

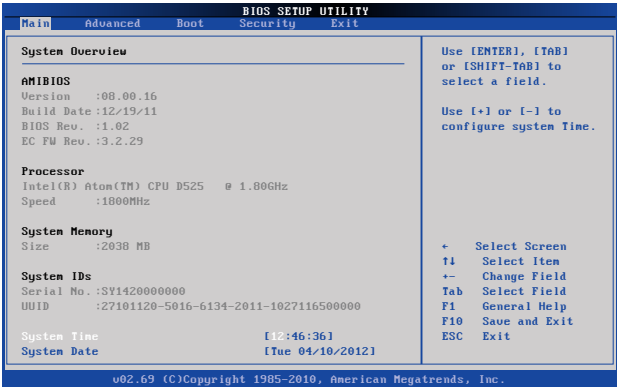
R1: None

R2: Enter (to accept new value)

R3: F10 (to save changes and exit BIOS)

R4: Esc (to cancel change and step back to previous screen)

Main Menu



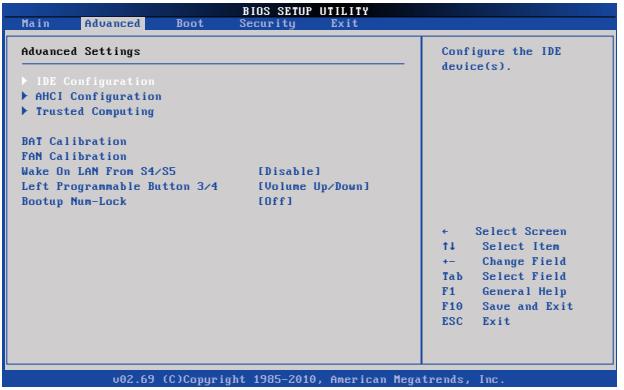
System Time

Sets the system time. Accepts and displays values in 24 hour format.

System Date

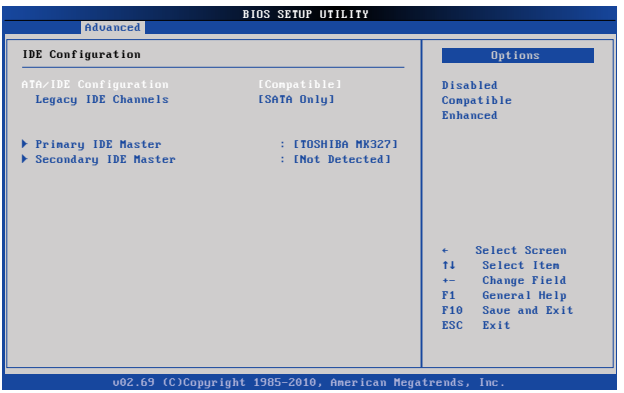
Sets the system date. Accepts a value from January 1, 1980 to December 31, 2099. This value takes effect immediately.

Advanced Menu



IDE Configuration

Sets SATA mode to Compatible (for standard SATA hard drives), Enhanced (for IDE emulation or AHCI mode), or Disabled (for booting the system from a source other than an internal data drive). Mode should be set to Enhanced and Configure SATA as AHCI to use Solid State Drives (SSD).

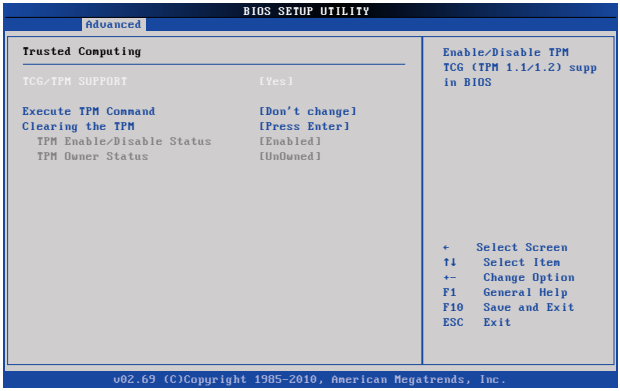


IDE Configuration Screen

AHCI Configuration

Enables the detection of AHCI enabled devices and allows S.M.A.R.T. drive integrity monitoring to be enabled or disabled.

Trusted Computing
Enables/Disables and sets state of the Trusted Platform Module.



Trusted Computing Screen

Battery Calibration
Starts battery calibration test to check battery capacity and charge/discharge levels for more accurate battery status.

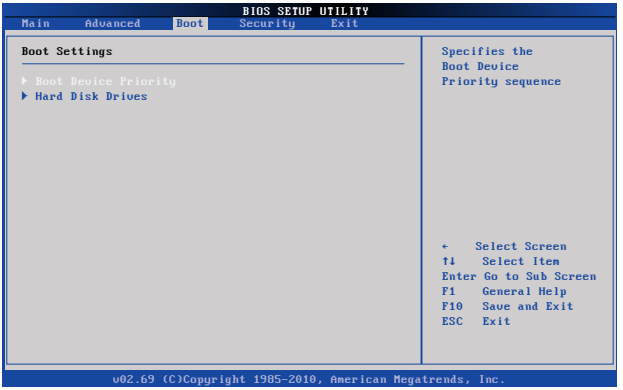
FAN Calibration
Starts fan calibration test for more efficient system cooling. Factory default should be proper. Only run this test if system has overheating issues or fan begins to run constantly.

Wake on LAN from S4/S5 mode
Enables/Disables system to wake from low power state by LAN requests.

Left Programmable Button 3/4
Sets 3rd and 4th function buttons on the left side of the Tablet PC to adjust either the Speaker Volume or Screen Brightness.

Bootup Num-Lock
Sets whether the Num-Lock key on an attached USB keyboard is enabled or disabled by default.

Boot Menu



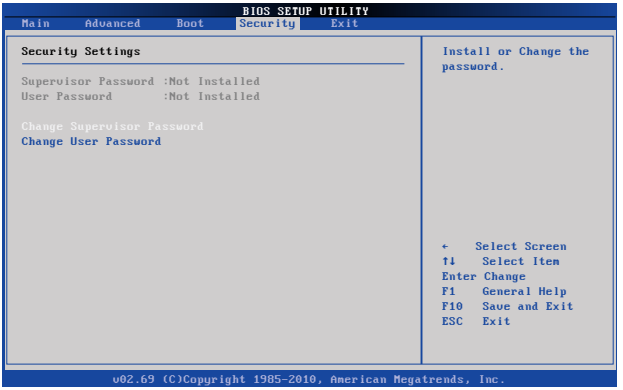
Boot Devices Priority

Sets the device priority the system looks for to boot from. Can be a physically attached drive or a network drive.

Hard Disk Drives

Sets the order of devices from which the system will attempt to boot. This is where you can set the Tablet PC to boot from an external drive, such as a DVD drive or USB thumb drive. Setting this order will also set the drive in ***Boot Device Priority*** screen above.

Security



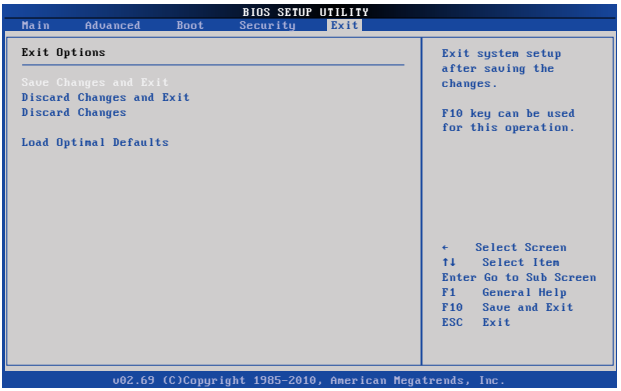
Supervisor Password

Sets password to enter and change settings in BIOS. Setting only this password will not require a password to be entered in order to boot the system, but a password will be required to enter the BIOS.

User Password

Sets password to allow the system to boot. If no Supervisor password is set, user will be allowed to enter BIOS without being required to enter an additional password.

Save & Exit



Save Changes and Exit

Saves the changes made to the BIOS and exits. Selecting [Yes] saves changes and exits. Selecting [No] returns to menu without saving any changes.

Discard Changes and Exit

Discards changes made to the BIOS and exits. Selecting [Yes] exits BIOS without saving any changes. Selecting [No] returns to menu without saving changes.

Discard Changes

Discards any changes made to the BIOS. Selecting [Yes] discards any changes made to the BIOS. Selecting [No] returns to the menu without discarding any changes made to the BIOS.

Load Optimal Defaults

Loads the optimized system defaults as configured from the factory. Selecting [Yes] changes all the BIOS settings back to their original optimized factory settings. Selecting [No] keeps the BIOS settings as they are currently and returns to the menu.

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Appendix B

Specifications

Processor

Intel® Atom™ D525 (1.8GHz, 13W max TDP)

- Two (2) cores, four (4) threads
- On die, 32KB instruction and 24KB write-back data L1 cache
- On die 2x 512KB, 8-way, L2 cache
- Support for IA 32-bit
- Intel® Streaming SIMD Extensions 2 (Intel® SSE2)
- Intel® Streaming SIMD Extensions 3 (Intel® SSE3)
- Intel® Streaming SIMD Supplemental Extensions 3 (Intel® SSSE3)
- Intel® 64 architecture
- Execution Disable Bit support for enhanced security

Chipset

- Intel® ICH8M
- Intel® Active Management Technology (Intel® AMT)
- Intel® HD Audio Technology
- Serial ATA 3Gb/s (SATA II)
- 1Integrated Gigabit LAN Controller via PCI Express connection, supports IEEE 802.3, 10/100/1000Mbps Ethernet support

Power Management

- Support for ACPI 1.0b
- Support for C0, C1, S0, S3-S5 ACPI power states
- PC99 suspend to DRAM support ("STR" mapped to ACPI state S3)
- Supports CPU Thermal Management 1 (TM1)

Memory

- 1x 204-pin DDR3 SODIMM socket, user accessible
- Support for 1GB/2GB/4GB SODIMMs
- Unbuffered, non-ECC
- Maximum RAM configuration of 4GB
- 800MHz (PC3-6400)
- I/O Voltage of 1.5 V
- Single channel, 64-bit wide data lines

Batteries

- 3 Series, 1 Parallel (3S1P) Lithium-Ion cells per pack
- Sanyo prismatic cells
- Typical capacity : 1880mAh per pack
- Typical voltage: 11.1V
- Typical Wattage: 21Wh per pack
- Maximum Discharge Current: <3.76A
- Charge Voltage: 12.6V
- Maximum Charge Current: 1A
- Operating Temperature: 0–45° C
- Storage Temperature: -20–40° C
- Over Charge Protection, Over Discharge Protection, Over Current and Output Short Protection, Over Thermal Protection

Data Storage Drives

- 2.5" 9.5 mm, Ultra DMA SATA II 300 MB/s
- Configurations from 40 GB Solid State Drive (standard)
- Configurations from 320 GB HDD (optional)

Video

- Integrated refresh of 3rd Generation Intel® Graphics Core
- Intel® Dynamic Video Memory Technology (DVMT 4.0)
- 400MHz Render Clock Frequency
- Microsoft® DirectX® 9 Pixel Shader 2.0
- Intel® Clear Video Technology
- MPEG2 Hardware Acceleration
- Dual Display (extended desktop or desktop mirroring) via optional Docking Cradle or VESA Mounting Plate

Input Panels

Resistive Touch Screen

- 5-Wire Passive Resistive Touch
- PenMount 6000 USB Controller
- USB Full Speed Interface
- Resolution: 2048 x 2048
- Sample Rate: 160 pps

Projective Capacitive Touch Screen

- Five (5) finger capacitive multi-touch
- Response Time: < 35ms
- Position Report Rate: 160 points/sec for single touch
- Touch Panel Surface Hardness: 7H minimum
- Touch Panel Transmittance: 80% minimum

Wacom® Active Digitizer

- Technology: Electromagnetic Resonance
- Resolution: 0.01mm (2540ppi)
- Coordinate Accuracy: ±0.4mm
- Detectable Pen Tilt: up to 50.1° from vertical
- Detectable Height: 5–14mm above sensor board
- Position Report Rate: 160pps
- Pressure Resolution: 256 levels @ full scale
- Wacom® Stylus with side switch and eraser (no batteries required)

Display Options

Hydis HX121WX1-101 color active matrix TFT LCD

- 12.1" WXGA (1280x800) AFFS+ with LED Backlight
- 262,144 color display (16.7M colors via dithering)
- Typical White Luminance: 300 nits
- Response Time: 30 ms (black to white to black)
- Viewing angle: 180° V/H (with Contrast Ratio > 10)
- SUN-BRITE™ Sunlight Enhanced Outdoor Readable (light reflection enhances overall screen brightness up to 500 nits)
- Required for systems with a Wacom Active Digitizer

Hydis HX121WX5-114 color active matrix TFT LCD

- 12.1" WXGA (1280x800) TFT with LED Backlight
- 262,144 color display (16.7M colors via dithering)
- Typical White Luminance: 220 nits
- Response Time: 30 ms (black to white to black)
- Viewing angle: 178° V/H (with Contrast Ratio > 10)

Audio

- High Definition Audio Codec (ALC272-GR)
- Microsoft® WLP 3.10 compliant
- Two (2) stereo DACs support 16/20/24-bit PCM for dual independent playback (multiple streaming)
- Two (2) stereo ADCs support 16/20/24-bit PCM for dual independent recording
- Both DACs (output) and ADCs (input) support independent 32-bit 44.1/48/96/192kHz sample rates
- Built-in 4 Ohm, 1.0W Stereo Speakers
- Built-in Dual Digital Microphone Array for added fidelity and accuracy
- 3.5 mm Stereo Headphone & Microphone Plug 'n Play Jacks

Gigabit Ethernet (LAN)

- Intel® 82577 GbE PHY controller with built-in RJ45 port
- 10/100/1000 Base-T IEEE 802.3 specification conformance
- Supports up to 4KB Jumbo Frames (full duplex)
- IEEE 802.3u auto-negotiation conformance
- MDC/MDIO management interface
- MACSec hardware ready (802.1AE), Intel® vPro, Intel® Viiv and Intel® Virtualization support
- PCIe-based interface for active state operation (S0 state)
- SMBus for host and management traffic (Sx low power state)

WiFi Wireless

- Intel® Centrino® Advanced-N 6205
- WiFi Certified for 802.11a/b/g/n, WMM, WPA,WPA2 and WPS
- Microsoft® WHQL Certified
- IEEE 802.11a/b/g/n, 802.11d, 802.11e, 802.11I, 802.11h

- Supports Infrastructure or ad hoc (peer-to-peer) network architectures
- Supports seamless roaming between respective access points (802.11b, 802.11g, 802.11a/b/g, and 802.11a/b/g/n)
- Supports WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA Authentication
- Supports PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2 Authentication Protocols
- Retail (Credit Card Processing) Compliance: PCI, CISP
- Government Compliance: FIPS (Windows 7 only), FISMA

Bluetooth Wireless

- Billionton GUBTCR42M Bluetooth® 2.1+EDR built-in USB module with Power ON/OFF Switch
- Full speed USB 2.0 interface
- Bluetooth® wireless access up to a radius of 32.8 feet (10m)
- Connect up to 7 different enabled Bluetooth® devices simultaneously
- Encryption and authentication ensure safe, secure communications

TPM Security

- Infineon Single-Chip SLB 9635 TT 1.2 Trusted Platform Module (TPM)
- Trusted Group Computing (TCG) v1.1B / v1.2 compliant
- Security architecture based on Infineon security controller family
- ROM for TCG firmware
- EEPROM for TCG firmware and data
- Hardware hash accelerator for SHA-1 algorithm

- Advanced Crypto Engine (ACE) for asymmetric key operations (up to 2048-bit key length)
- Power saving sleep mode
- 3.3V power supply

Fingerprint Reader

- UPEK TCS5BA6A
- Advanced sensor for high volume applications
- Ultra-tough SteelCoat™ protective layer with improved scratch and impact robustness
- Lifetime: >10 million swipes
- Grayscale image depth: full 7-bit
- Array width: 144 pixels
- Array horizontal pitch: 50 microns
- Pixel resolution: 508 DPI horizontal
- Finger swipe speeds up to 25 cm/s

I/O Ports

- RJ45 (Gigabit Ethernet LAN)
- 2x USB 3.0 SuperSpeed
- 3.5 mm Audio Out and 3.5 mm Audio In
- DC-In
- Cradle Connector
  (Optional Sahara Slate PC i500 Docking Cradle adds 4x USB 2.0 ports, 1x IEEE1394a port, 1x 15-pin D-Sub connector (VGA), 1x RJ45 jack for 10/100 Mbps Ethernet LAN, 1x DC-In with power pass-thru)

Weight

- 1.34 kg (2.95 lbs.) with one standard battery installed
- 1.49 kg (3.3 lbs.) with two standard batteries installed

Measurements

- 300 mm x 220 mm x 24 mm (11.81 in x 8.66 in x .95 in)

Case Color

- Black front, silver back

LED Indicators

- Power (ON: blue, Standby: blinking)
- Battery (Charging: orange, Low (<10%): orange blinking, Fully charged with DC connected: green)
- Hard Drive (Activity: blue blinking)
- Wireless Networking (ON: blue)
- Bluetooth® (ON: blue)

Function Buttons (Left)

- SAS (Ctrl+Alt+Del)
- Screen Rotation (enter BIOS during POST)
- Volume Up or Screen Brightness Increase (define in BIOS)
- Volume Down or Screen Brightness Down (define in BIOS)

Function Buttons (Right)

- Touch Screen on/off
- User Programmable (Wireless mode select when 3G WWAN expansion module is attached: WiFi/3G WWAN/Both)
- User Programmable
- User Programmable

Control Switches (Top)

- System Power Switch
- Wireless Networking Transmitter On/Off
- Bluetooth® Transmitter On/Off

AC Adapter

- Input voltage (nominal): 100 ~ 240 Vac
- Input voltage (maximum): 90 ~ 265 Vac
- Input Frequency: 47 ~ 63Hz
- Input current: 1.7A maximum at 90 Vac
- Output voltage: 20V ~ 21.4V DC
- Output current: 3.25A maximum
- Output power: 65W maximum
- SCP: Short Circuit Protection plus Auto-Recovery Function
- OVP: Over-Voltage Protection, Latch Mode, up to 27.0Vdc maximum
- OCP: Over-Current Protection, Auto-Recovery, up to 5.5A maximum
- OTP: Over-Temperature Protection to prevent catastrophic failure from overheating.

Operating Environment

- Temperature: +5°C ~ +35°C (+41°F ~ +95°F)
- Humidity: 20% ~ 80% (without condensation)

Storage Environment

- Temperature: -20°C ~ +65°C (4°F ~ 149°F)
- Humidity: 5% ~ 90% (without condensation)

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